

Railway Age

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Another Operating Problem Solved by "Union" C.T.C.

WHERE many of the passing sidings on a double track railroad are too short for the length of freight trains necessitated by the traffic and, as a result, slow up service, the solution is "Union" C. T. C. Where this system has been installed, sidings are seldom used on double track lines which have been equipped for either direction operation on both tracks by signal indication, because trains are generally

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Double track territory equipped with "Union" C. T. C. and signaled for train operation by signal indications in both directions, on one or both tracks, provides a facility that is the equivalent of three or four tracks when signaled in one direction only.

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The economic advantage of C. T. C. operation versus trackage, merits your investigation.



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Some People Enjoy Ill-Health

We heard the other day about an invalid. Once he was strong and prosperous, but now he has been laid up for a long time. One of the things that has kept him sick is a bad infection in his foot, but he won't do anything about it. He just hobbles around and hollers and swears at the pain it causes him, but that is all.

One day six of his good friends and neighbors called on him and said: "You have been hobbling around on that foot a long time, and the infection from it is keeping you sick and poor. You can't work like you used to, and some of your kids are going hungry and they are threatening to steal things to eat from the neighbors. We like you and we like your kids. So give yourself a break; quit punishing that foot; call in a real doctor to treat it; and give it a chance to get well—so you will get well too. You will be happier and more prosperous. And your kids won't be hungry any more, and the whole neighborhood will be better off."

Health Hints from the Undertaker

So the sick man answered, "Well, boys, I'll think it over." And then he called in the man who had his job at the factory while he was off sick. And he called in the nurse who had the job taking care of him as long as he was laid up. And he called in the old herb-woman who had been selling him a box of snake-oil salve every day to rub on his sore foot. And he told them what his six neighbors had advised him, and asked: "Now what do you think I ought to do?"

The man who had his job at the factory said: "Well, if I were in your place, I would not be in any hurry. The doctor might hurt you some before he cured you. You have only been sick now for nine or ten years, and you are still alive, aren't you? Take your time and consider very carefully just what ought to be done. Just get yourself a haircut and have your teeth cleaned—that's what you really need; and forget about that foot."

And the nurse-woman said: "That foot of yours doesn't deserve any better treatment than it is getting.

What is the matter with it is, it's full of water; and if you'll just let me squeeze all the water out of it, that is really all it needs. Why does that foot deserve a lot of attention, more than your hands or any other part of your body? I think that the nerves that run that foot are mostly rotten anyhow, and I'd like to yank them out for you. Besides, while you have got trouble, I have got a job."

Hair of the Dog Prescribed

And the herb-woman said: "This salve I am giving you is the latest and best thing there is for a sore foot. It is economical too. Of course, your foot doesn't seem to be getting much better—but what you need is more and more of my snake-oil salve. Anyhow, your foot ought to take steps to cure itself. Besides feet are old fashioned. A wheel-chair with rubber tires and a gasoline motor is just what you want and I'll get you one cheap; or maybe you could use a canoe. Don't forget that I have got a lot of friends, too, over on the other side of the tracks; and if you quit buying my salve, you and your kids won't be very popular with us."

So the sick man called his six neighbors back and said to them: "Boys, I have been thinking over the proposition that you made to me the other day—how I ought to quit abusing this sore foot of mine and get in a real doctor to take care of it for me. On the other hand, there isn't any hurry about it. I have been sick only ten years, and another couple of years won't make much difference. Besides I don't want to run any risk and take the wrong cure. And a real doctor might hurt me some while he was curing me."

Why Not Wait 'Till Next Year to Get Well?

"Then, too," he continued, "I have been told that what I really need is to have a shave and have my teeth cleaned. So I think I'll do that this year, and then, maybe, if my nurse and the snake-oil woman haven't got me feeling a little better by next year, that will be time enough to call in the doctor."

"I have to think of that herb-woman and her friends.

I am sure they would resent it if I called in a real doctor. Those people on the other side of the tracks are awfully numerous, you know, and I can't afford to take chances offending them. Snake-oil salve is a modern development, you know, and I mustn't try to turn the clock back and stand in the way of progress. At least, I feel like trying it a while longer. There will be an argument if I call in a real doctor who understands all about the human body and what makes it work properly—and I'd almost rather never get well than have an argument.

One Man's Illness Is Another's Santa Claus

"You gents seem to forget that my nurse has to live, and if I am not in trouble, who would give her a job? Why should I pamper my foot anyhow? It's full of water, and it has never done what it ought to, to cure itself. You boys have a selfish interest in getting me well. You are worrying about my kids. Well, let the kids take care of themselves, or let the neighbors feed them. Why should I pay any more attention to you than to my nurse and the snake-oil woman and the man who has my job at the factory?"

"It's time for my nap now, so good-bye, and come around to see me again next year, and maybe I'll take your advice then, if my nurse and my herb-woman and the fellow who is holding down my job at the factory say it is okay."

There was a tough fellow living across the pond from the sick man; and when he heard that the sick man had decided to keep his sore foot for another year, he gave a horse-laugh and said: "Just what I thought. The old fellow is getting soft, so he pays more attention to the old women who are living off of him than he does to taking care of his own kids. When I get ready to grab things I won't have to be scared of that guy stopping me."

* * * * *

The above story came to us, and we are printing it just as it was received. We understand that the first part of it is the gospel truth, but the part about the man deciding to stay sick for at least another year is just gossip. The people who are telling that part of the story are just doing it in the hope that that is what the old man is going to do. We have tried to find out the names of the people in the story, but so far we have been only partially successful. Maybe you think the sick man's name is Caspar Milquetoast, but, if you do, you are wrong. His name is Uncle Sam, and the foot that is troubling him is his right one, which is his principal means of transportation.

Our informants are less sure about the names of the rest of the characters in the story. Most of them agree that Harrison and Norris are the monnikers of two of the six friends who called upon Uncle Sam with neighborly advice. Opinions differ on the identity of the man who is doing well at the factory while Uncle Sam

is laid up. One fellow said his name was Wheeler and another said his name sounded like Commission. Our informants were a little confused on some of the other names too. One or two told us that the nurse's name was Whitney, while another insisted it was Nitleek (we are not sure of the spelling). Several names were given us for the herb-woman. One sounded like Child. Another might have been Ashborn. Another was Rogers or Markum, or something like that.

Waiting for the Leopard to Change His Spots

We hope the last part of the story isn't true. We hope Uncle Sam will quit dawdling around about a foot condition that by now he certainly knows is the principal reason why he remains an invalid. If the nurse and the herb-woman were going to cure him, they would have done so long before this, because, God knows, they have had their way with him for years; and during this time his condition has steadily grown worse. Clearly, the old gentleman never can get well if he is going to permit these well-meaning but poorly informed old ladies to dictate to him forever. They won't be any more offended or any more disagreeable if a reliable doctor is called in on the job this year, than they will be if he is called in next year or the year after. In fact, the longer they hold the whip-hand over the old gentleman, the more abused and indignant they are going to feel when they are dislodged.

So we hope that a new and happier ending can be written for this story. And that Uncle Sam will soon call in the doctor recommended by his six neighbors (the name suggested was Dr. Transportation Board, but Dr. National Resources Board might do if the other doctor can't be reached in a hurry); and we further hope that Uncle Sam will say to the doctor:

"Doc, I'm damned tired of being sick and I'm damned tired of taking advice from people who don't know what they are talking about, and who may not care very much whether my foot ever gets well. So I'm going to listen only to you, and do exactly what you say; and I want you to cure up this foot condition for me once and for all. And I won't mind a little temporary pain, if you will cure me quickly. I want to go back to work and get prosperous again, and feed my kids properly — and this foot is the only big thing that is holding me back."

Uncle Sam May Need a Healthy Right Boot

"You know me, Doc. I'm a peaceful man. But there is a tough customer across the pond who has been shoving a lot of little people around in a way I don't like. I'm never going to start anything—but Doc, just between you and me, I want this right boot in A No. 1 shape just in case that guy should come over here and get to acting so I have to plant it on him where it will do him the most good."

Under-Maintenance— How Much?

The Bureau of Statistics of the Interstate Commerce Commission has arrived at the conclusion that the railways were under-maintained to the amount of \$283,-820,066 at the end of 1938. This conclusion was reached through the tabulation of replies made by the railways to a questionnaire issued by the Commission recently, the first and most important question in which asked, "How much would it cost to put the respondent's railway in what it considers a normal condition to handle a volume of traffic in 1939 equal to that actually experienced for the calendar year 1937, that is, to make good deferred maintenance which has accrued to December 1, 1938."

When one considers the confusion created by this question, he is not surprised that the results are widely at variance with the facts, for this question suggests two entirely different bases for reply. It is one thing to determine the expenditures that it would be necessary for a railway to make to enable it to handle a given amount of traffic this year with safety and reasonable expedition. It is another and widely different matter to determine the deficiency in maintenance that exists on that road from the standard that will enable the traffic to be handled and the property to be maintained with maximum efficiency.

The comments of various railways accompanying the tabulation indicate that the first basis was that selected by most of the roads. It appears also that the returns bear little relation to the amount of deferred maintenance that actually exists. They take no account, for illustration, of the accumulated neglect in the painting of buildings or the policing of the right-of-way, since these operations in themselves bear little relation to the ability of a road to move traffic in a given year, although they cannot be neglected indefinitely without adding greatly to the ultimate expenditure for property upkeep.

Especially outstanding in the Bureau's report is the wide discrepancy in returns filed by different roads, ranging all the way from "no deferred maintenance" to as much as \$75,000,000. To one even remotely familiar with the conditions on various properties, such figures simply do not "click," especially when some of the smaller totals are reported by roads whose retrenchments have been most marked, and when some of the larger totals are for roads whose maintenance expenditures in recent years have been above the average.

In these days of long-continued, severely-restricted expenditures, no two roads are in the same condition, for each road's expenditures have been influenced by the magnitude of the reduction in its individual earnings. Among the more favored roads, the amount is fixed in part, also by the policies of the different managements in determining the extent to which they should attempt to maintain those pre-depression standards which previous experience has demonstrated to

be most economical. Again, for any one railroad there is seldom any uniformity in retrenchment on important main and minor branch lines, as between such basic expenditures as tie renewals and less pressing activities like painting buildings. As a result, any accumulated total of deferred maintenance must, of necessity, be a composite of many figures, each dealing with a specific type of work or expenditure.

A far more conclusive evidence of the extent of under-maintenance is afforded by the action of railway managements when given earnings sufficient to warrant increased outlays. Given the necessary earnings, no one doubts that they will take steps to bring their properties into that condition that they know is conducive to most efficient operation of the properties—and the amount that they will spend will be several times that listed by the Bureau as the total accumulation of deferred maintenance.

It is to be regretted that the Commission issued its questionnaire in the form that it did, for the results cannot be other than confusing to those persons who are not intimately connected with the railway industry but who are endeavoring to determine the condition of the industry. If the Commission desired to determine the full measure of under-maintenance of the properties, it should have prepared its questionnaire with greater care and exactness and should have given the railways more time in which to develop the information. It should also have established the basis with which the present condition of the properties should be compared, as that which prevailed between 1925-29 when the railways were in a position, in general, to make those expenditures which the necessities of wear and tear and considerations of economical operation justified.

Average Rail Pay \$1,859 in 1938

Figures just made public by the Interstate Commerce Commission show that average earnings of railway employees in 1938 amounted to \$1,859, the highest figure ever reached. The previous peak occurred in 1920, when average earnings per railway employee were \$1,820.

Annual compensation is determined by average hourly rates of pay and by the total number of hours paid for during a year. Average hourly earnings were 74.9 cents in 1938 and 67.6 cents in 1920. Average hours paid for, however, were 2,481 in 1938 and 2,693 in 1920. Despite this reduction in hours, the increase in average compensation per hour was large enough to result in higher annual earnings in 1938 than in 1920. Briefly stated, from 1920 to 1938, average hourly earnings of railway employees increased eleven per cent, average annual hours paid for *decreased* eight per cent, and average annual earnings increased two per cent, setting a new peak.

In 1929, average hourly earnings of railway em-

employees amounted to 66.6 cents. The low mark during the depression was reached in 1933, when the average was 62.9 cents. Since that time there has been a steady increase to the 1938 average of 74.9 cents. Average annual earnings amounted to \$1,744 in 1929, fell to a low of \$1,445 in 1933, and then increased steadily to \$1,859 in 1938. From 1929 to 1938, average annual compensation increased seven per cent, average hours paid for *decreased* five per cent, and average hourly earnings increased twelve per cent.

For general classes of railway employees, average earnings in 1938 were as follows. Executives, officers and staff assistants received an average of \$5,809. The 163,000 professional, clerical and general employees received average wages of \$1,947; the 187,000 men engaged in maintenance of way work averaged \$1,244; and the 240,000 employees engaged in the maintenance of equipment received an average of \$1,666. The 203,000 engineers, firemen, conductors and brakemen averaged \$2,444, while the 135,000 other transportation service employees averaged \$1,715. The total payroll for the Class I lines amounted to \$1,746,193,567 in 1938.

Collection and Delivery Contracts

The first few railways which ventured into the provision of free pick-up and delivery service either operated with their own vehicles, or contracted with one or more drayage companies. These contracts varied widely with individual railroads, and, a few years later, when free pick-up and delivery was extended over large sections of the country on a few days' notice, the variation in contracts became even more pronounced.

Collection and delivery service has expanded rapidly and is now definitely in the class of big business, with more than one hundred thousand motor trucks owned or under contract in railway service exclusively. Some railways operate their own trucks, some contract with one drayman in each town, and others contract with a great many haulers. Still others use the services of the Railway Express Agency, which, with contracts for 8 to 10 per cent of the nation's pick-up and delivery service, is the largest individual hauler of this type of freight.

Each railway justifies its choice of pick-up and delivery agencies by various arguments. Those using only one hauler in each town point out that more efficient operations are thus obtained through better supervision and by reason of the fact that the driveways of the shippers, receivers and freighthouses are not cluttered up with a multiplicity of trucks, many of them doing the same work. Those using many draymen maintain that, because of the relations between these companies and the shippers, and because many of the drayage companies own warehouses as well, more traffic is secured.

It is not the purpose here to determine which of these methods is most desirable, if, indeed, the widely varying conditions at different points permit of any one solution. However, now that the old contracts—many of them entered into hastily—are expiring, close attention should be given to the conditions under which they are renewed. One of the most important things to be considered is the solicitation abilities of the haulage contractors' truck drivers. In the final analysis, these are the men who actually contact the customer daily, and serve as the railways' representatives on the ground, and the amount of freight that is gained or lost in the customers' shipping rooms is far too great to be minimized or overlooked.

It might appear, under superficial examination, to matter little to the railways what type of equipment the hauler uses in making his pick-ups and deliveries. Actually, however, this has an important and immediate bearing on the efficiency and cost of the operation, since old trucks and underpowered or overpowered trucks are fruitful sources of increased costs. Many of the smaller haulers are by no means outstanding as modern business men, and are subject to the common failing of the trucking industry of ignoring costs and depreciation. Hence, it is incumbent upon the railways hiring them to provide in their contracts for considerable control of equipment maintenance and purchase. Railways that have done this and given alert attention to this phase of off-rail operation have found that the effort pays dividends in improved and more efficient operations and in holding the cost of this supplementary service within reasonable bounds.

* * *

Million-Dollar Sandbars

Sen. Clyde M. Reed of Kansas has introduced a bill to liquidate the assets of the government-owned Inland Waterways Corporation, whose pilots navigate the snags and sandbars in the Missouri River in the seasons when that venerable stream is more than a trickle.

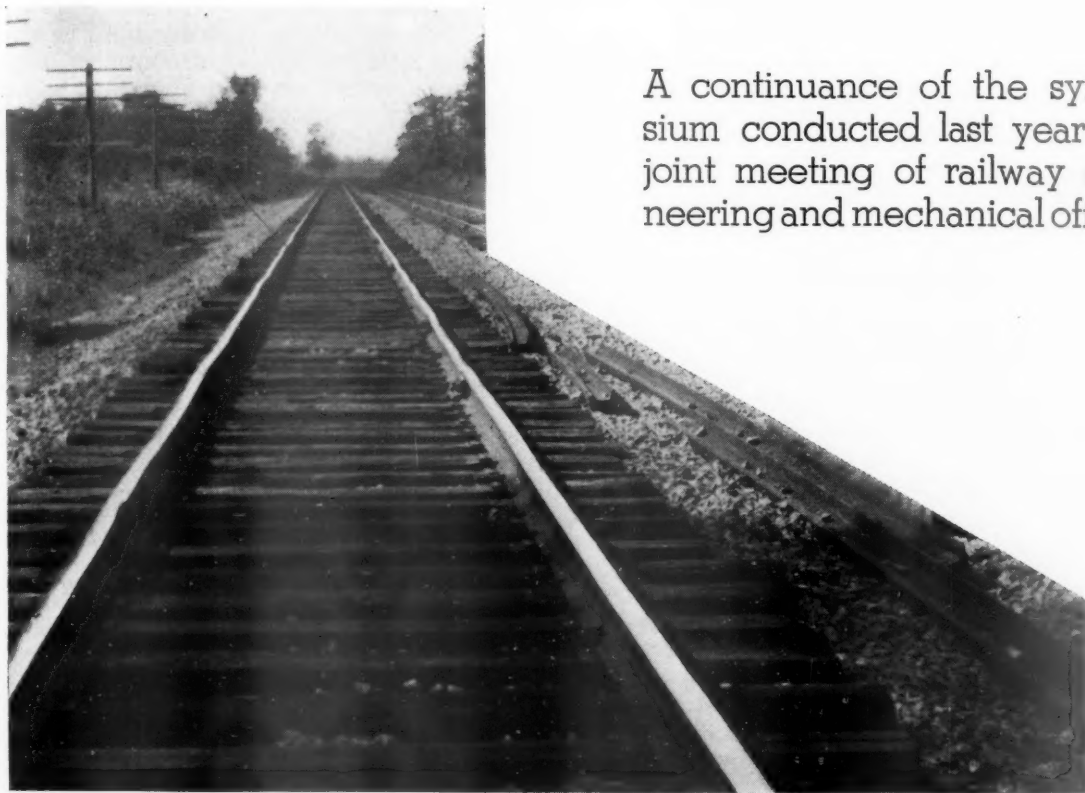
"I do not think," says the senator, "that the federal government has any more business operating barges on channels built at public expense than it has to operate a fleet of trucks on highways built in the same way."

His logic is invulnerable. We hope his bill passes. The barge line charges rates which are competitive with the railroads, and it is a negligible factor in the transportation picture. If its rates were in proportion to the millions sunk in the river to stabilize the channel, it would be cheaper to ship scrap iron by air mail express.

If the bill passes, there would remain the matter of the white elephant Kansas City possesses in the form of a municipal wharf. After the war department dug their channel, the waterways enthusiasts induced us to vote \$500,000 in bonds 10 years ago to build a freight terminal. It is not much of a civic asset now and it would be worse than useless without a barge line. It could be fittingly turned into a depository for speeches, resolutions and minutes of conferences for the promotion of water transportation in the last two decades, after which its doors might be sealed and the whole affair quietly forgotten.

From the Kansas City Journal

Relation of Locomotive Design to Rail Maintenance



A continuance of the symposium conducted last year at a joint meeting of railway engineering and mechanical officers

An Example of What Improper Counterbalance Can Do to the Track

THE influence of locomotive design on rail maintenance with modern high operating speeds and heavy wheel loads was again considered at a joint dinner meeting of the Western Railway Club and the American Railway Engineering Association at Chicago, March 15, this meeting being, in effect, a continuance of the symposium initiated when the two groups last met jointly on March 16, 1938.

Approximately 1,000 members and guests of the two associations were present at the dinner to which members of the National Railway Appliances Association, the Maintenance of Way Club of Chicago and the Western Society of Engineers were also invited. The viewpoint of the railway mechanical engineer was presented by Kenneth Cartwright, mechanical engineer, New York, New Haven & Hartford, and that of the maintenance engineer by H. R. Clarke, engineer maintenance of way, Chicago, Burlington & Quincy. At the conclusion of the two addresses, Mr. Clarke showed a moving picture of the carefully-conducted and highly-informative locomotive slippage tests recently made on the Burlington.

As the Track Man Sees It

By H. R. Clarke*

The railroad track structure has passed and is progressing through an important cycle of development. In

the beginning it consisted of a plank or timber runway, soon reinforced or armored with an iron strap; then an iron rail set in or fastened to stone blocks. Very soon, all of this gave way to a rail, approximately "T" shaped, fastened to wood crossties—the rail, iron at first, and later steel. This is still the basic track structure, but it has been strengthened and improved to meet the demands of traffic by better and more scientific roadbed drainage; a sufficient depth of suitable ballast; larger ties, properly treated to retard decay and protected by adequate tie plates to reduce mechanical wear; heavy rail of improved design and material, anchored to prevent rail creepage; and with angle bars or rail joints designed to develop all of the strength possible within the limits imposed.

Is the Track Structure Adequate?

With all of the improvement that has been made in every part of the track structure, the question is asked very properly, "Is the track structure adequate to meet the demands being made on it?" In my opinion, the answer is, "Yes." I qualify this, however, by saying that the equipment, both motive power and rolling stock, must be properly designed and maintained for the speeds at which it is to be operated. We cannot take antiquated and obsolete equipment, designed for operating under much less exacting requirements and expect to use it successfully and economically under present demands.

The problem that confronts us is one that concerns at

*Engineer Maintenance of Way, Chicago, Burlington & Quincy, Chicago.

least two departments—the mechanical department and the engineering, or maintenance of way department. This has always been true, but lately we have come to realize this more definitely and to act on this realization.

It is conceivable that a track structure could be built so strong and stable that it would withstand any possible punishment, permitting the use of equipment not properly designed and that was very destructive in its effect. The cost of such a structure is another matter. We know that with properly designed and maintained equipment the present track, properly maintained, answers very well, and we also know that suitable equipment has been designed and built. It therefore becomes a question of economics between spending unknown amounts on the track structure or fairly well-known amounts on equipment.

A Question of Economics

Following the presentation of this subject last year, articles have appeared in the technical press by writers, mechanical engineers, with whom I, as an engineer maintenance of way, disagree very decidedly. Furthermore, tests have been made by several roads, the Burlington among them, which I believe prove that some of the theories advanced in these articles are founded on insufficient data. With some of the statements and conclusions in one of these articles we can all agree, but with many of them any one who has given thought and study to the operation of modern high-speed trains, their effect on track and the reasons for these effects, must, I think, differ. We know that "satisfactory surface, line and superelevation must be assured for good riding qualities." The fact that trains are operating daily over many thousands of miles of track at schedules averaging up to nearly 70 m. p. h. for long distances, to maintain which long sustained speeds over 100 m. p. h. are frequently necessary with entire comfort and safety, makes any further comment on this point unnecessary.

No maintenance officer ever thinks the track structure for which he is responsible is perfect. Probably no one knows better than he the weaknesses that may exist, but certainly after nearly four years of very close association with some of the fastest trains in the country, operating more than 6,000 miles a day, I am far from being convinced that the present track structure and standard of maintenance are not as "fast" as present day equipment, if the equipment has been designed for the speeds at which it is to be operated.

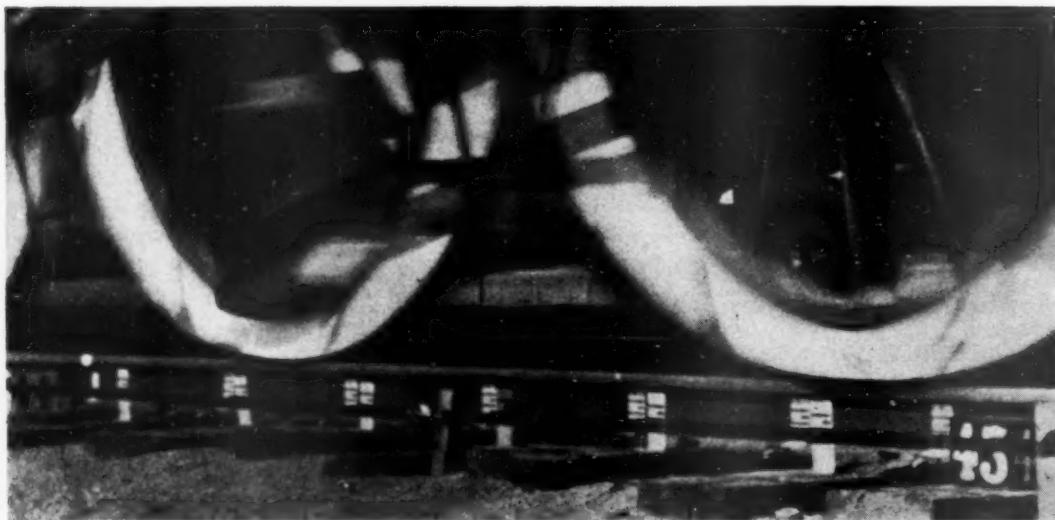
It is suggested further in the article referred to, that

the present center of gravity of steam locomotives may result in less harmful lateral pressure against the rail than if the center of gravity were lower. "A lower center of gravity is a desirable factor, but it is not essential. An improved track structure and a higher standard of track maintenance are more important."

Every maintenance of way officer is aware of methods and knows of locations where improvements in the track might be made, but there is an economic limit beyond which our judgment as engineers will not allow us to suggest we go, and certainly a very definite limit to the amount of money at our command. So, as I have already pointed out, it becomes a question of economics—of spending unknown and unreasonable sums on the track structure, or fairly well known and more reasonable expenditures on equipment.

We agree a low center of gravity is not essential; many fast trains pulled by steam locomotives are operating successfully, but I think those of us who have had experience with both, and especially those whose viewpoint is that of the maintenance of way officer, decidedly favor the low center of gravity and some type of motive power other than the reciprocating type of locomotive, especially if the latter is equipped with heavy rods and reciprocating parts. The center of gravity of the average steam locomotive is, I believe, about 80 in. above the rails, while that of the power plant of the Burlington Zephyrs is about 56 in. This lower center of gravity of the Zephyrs, combined with such other factors as lighter weight, absence of dynamic augment, reduction of lateral by the use of roller bearings, articulated couplings, etc., is of decided value in assuring comfort at high speeds without damage to rail. Here again, basing an opinion on the acid test of actual experience, trains such as the Zephyrs can be operated at speeds 10 m. p. h. in excess of so-called conventional equipment with equal or greater comfort and with decidedly less damage to track. The comparative effect on track of a steam locomotive and conventional equipment operating on the same schedule and replacing one of the Zephyrs has been demonstrated conclusively a number of times. The advantage is all with the Diesel-electric.

Everyone will agree that the larger the diameter of the wheels the better, so far as the effect on the rail is concerned, but vertical clearance limits this quite definitely. There are differences of opinion as to the desirable wheel tread taper and cant of rail, but regardless of the taper decided upon and originally placed on the tread, wear soon modifies this. The standard taper is one in twenty, and the tie plate cant most generally used is one



View Taken During the C. B. & Q. Tests, Showing Locomotive 3012—Drivers Slipping to Speed of 108 M. P. H.

in forty, although many flat plates are used. Based on experience, we have found that a semi-cylindrical wheel tread is of decided advantage in attaining riding comfort at high speed. The contact with the surface of the ball of the rail, at least theoretically, is not the same as that of a wheel tapered one in twenty, but the most careful inspection has failed to show any damage being done to the rail.

Rail Wear and Damage

In any study of rail and what is happening to it in service, we should separate the study into two classifications—rail wear and rail damage. Rail wear is directly proportional to service, or use. Needless to say, everyone connected in any way with the railroads wishes traffic was such as to wear rail much faster than is being done at present. Under the classification of rail wear should be included surface wear, or abrasion of the ball, resulting in reduced height of the rail, which seldom, if ever, is great enough to justify renewal of the rail, except on the low sides of curves; rail end batter; curve wear on the high sides of curves; and the flow of metal or surface wear, whichever it is, on the low rails of curves. Poor track maintenance, such as excessive expansion, loose joint bolts, and irregular gage, line and surface, may add to rail wear, but these conditions are seldom found on well-maintained, heavy-traffic, high-speed lines, and so may be disregarded.

It is somewhat more difficult to place or to define rail failures. These, except broken rails but including transverse fissures, vertical and horizontal split heads, piped rails and some bolt-hole or end breaks, almost always result from conditions developing during the manufacture of the rail and can very properly be attributed to mill defects. It is believed that transverse fissures can be greatly reduced, if not eliminated, by the controlled cooling and normalizing processes, and that the proper amount of discard will greatly reduce split heads and piped rails. These are details to be worked out between the rail mills and the roads, and progress is being made.

Rail damage is entirely different from either rail wear or rail failures and is due to the rail being stressed beyond the elastic limit of the steel. The roadbed and track structure may at times contribute to this. Heavier rail has advantages, but it is not a cure-all. Nearly everyone agrees that rail weighing 90 lb. and lighter is not desirable on fast heavy-traffic track, subject to present-day axle loads, and it is being replaced on most roads with 112-lb. or heavier rail as fast as available funds permit. Poor tie spacing would be most harmful, but is seldom found on heavy-traffic, high-speed track. Under methods and practices followed generally in renewing ties on the American railways, the tie condition cannot be uniform as some of the ties are old and some new, while some are more solidly tamped than others. Yet, any other method seems economically impossible. Furthermore, roadbeds are not stable and of uniform supporting power, a condition which is aggravated by climatic conditions, such as freezing, thawing, rain, dry weather, etc. No satisfactory so-called permanent roadbed has yet been devised, and the cost of those suggested is absolutely prohibitive. Even on steel bridges, every tie is not carrying the same load, so it would seem that entire uniformity in the track structure, while something to be earnestly desired, is impossible of attainment.

From the very beginning of railroad construction and maintenance we have had what are known generally as "service bent rails." These may be either surface or line bends, or both. The bends are rather long, shaped more like a curve than a kink, and are due more to track

conditions and maintenance standards than to equipment. This condition of rails generally develops over a long period of use, and I would class it more as rail wear than rail damage. Such bent rail can be straightened and made entirely suitable for further use, even in important tracks.

Damaged rail is nothing new. It has occurred frequently when a wedge has stuck or when an engine has been disconnected and moved at too high a speed. It has also occurred when to relieve a hot journal an engine has been blocked up, causing the distribution of the loads on the axles to be thrown out of balance. Such damage is, of course, due directly to equipment. Everyone is familiar with the counter-balance kink, which is a short, sharp and decided bend in the rail, downward and inward. These kinks are spaced an even distance apart, corresponding to the circumference of the wheel doing the damage, and are caused, usually, by an engine traveling at a speed higher than that for which it is counter-balanced, and generally when the engine is not working hard, if at all. Such counterbalance kinks have often occurred on track laid with heavy rail and in uniformly good condition, and can be charged to no other cause than improperly designed equipment, plus speed.

Other Types of Rail Damage

In addition to the types of rail damage already mentioned, others which have come under my observation are as follows:

(1) Rail bent downward, short and sharp, a definite kink, extending through the entire rail section, but differing from the counterbalance kink in that there was no side or inward bend and no regularity in spacing.

(2) An actual flexing or bending of the ball on the web, causing the ball to turn inward so that a dark streak appeared on the surface of the gage side of the ball due to the fact that wheels no longer came in contact with the entire ball surface. In such cases, the fishing height of the rail was actually decreased on the gage side and increased on the outside of the rail. These disturbed spots, which had no regularity of spacing, were usually about one foot in length.

(3) A similar lowering of the ball of the rail on the outside, so that a dark streak developed, and the rust or mill scale on the web was broken to a depth of $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in. down from the head. In this case, however, there was no change in fishing height and no visible bend in the rail.

In each case, where damage of the above types was noted, the locomotive causing the damage was located and the condition responsible was found and corrected. In each case a heavy locomotive, running at a high rate of speed, possibly up to 85 m. p. h. or more, was responsible, and in each case the correction required was of a rather minor nature. In most cases, if not in all, the damage occurred when the track conditions were as near perfect as could be expected. I mention this as no reflection on our mechanical department. The engines involved, while built only a few years ago, were not designed for the speed at which we now must operate them. The marvel to me is not that occasional slight damage develops, but that it is not much more frequent and serious.

By way of contrast, we have never found any evidence of rail damage caused by the Zephyrs, or by our new engines of the Aeolian type, designed and built primarily for high speed, and which at times pull the Zephyr equipment on Zephyr schedules at speeds up to and more than 100 m. p. h. I have been informed that the experience on other roads with similar equipment

is the same. This proves, I believe, that equipment can and has been built that can be operated at high speed without causing rail damage, while older equipment, not designed for such high speed, will cause damage when it is operated as required by present-day demands.

Rail Fractures in Winter

A fourth type of rail damage, differing from the others mentioned in that the condition of the track is a very definite factor, should also be studied. I refer to rails actually fractured, the breaks occurring during severe cold weather when the track is frozen solidly and consequently inelastic. These fractures occur without any previous warning signs that can be detected, and the breaks, when examined, shows metal without flaw or defect. We have determined quite definitely that these failures are due to a combination of conditions, most of them in the track. These are:

- (1) Rail and tie plate contact at the extreme edges of the rail base, which is due to a concave rail base or to an irregular tie plate surface, or both.
- (2) A slight seam or rolling scratch in the rail base at or near the center.
- (3) A solidly frozen roadbed, with consequent loss of elasticity and probable increased unevenness of bearing due to heaving.
- (4) A brittle steel condition due to extreme cold.

All of these are present when such fractures occur and are, of course, track conditions.

We have given a great deal of study to this problem and have handled it vigorously with the steel mills in an effort to correct the condition existing in the rail base and the tie plates. We have specified that, if possible, the rail base be flat or even slightly convex, rather than concave, and have made a determined effort to secure tie plates with a flat rail seat. An improved product has resulted, but I am not sure that all mills, especially in the manufacture of tie plates, have done all that can be done. I think further improvement is possible, and I know it is desirable. I suggest that a united effort on the part of all roads in this regard might be effective, as I cannot believe that the Burlington is the only road on which this trouble has developed.

While a track condition exists in connection with these rail fractures which is not what it should be, and which is certainly an important contributing factor to the fractures, the equipment is not blameless. Usually, when a serious number of these breakages occur, it follows the operation of a certain engine at high speed and, almost without exception, a careful check of the engine involved discloses a condition which, while well within the allowable limits of wear and standard of maintenance, is not perfect. This emphasizes the need of careful adherence to a very high standard of locomotive maintenance. As further evidence of the advantage of equipment properly designed for high speed, we have never yet had a fracture of the kind described occur under one of the Zephyrs or an Aeolian-type locomotive.

Locomotive Tests Made

To determine, if possible, what occurs when locomotives are operated at high speed, some interesting tests have been made by several roads, including the Burlington. On the Burlington, the test was made on the east-bound track just west of Bristol, Ill. Here the track is tangent for $5\frac{1}{2}$ mi. west and $2\frac{1}{2}$ mi. east of the test section, which is on a 0.15 per cent ascending grade. The track, on an embankment about 5 ft. high, is laid with 100-lb. 1926 ARA rail on 7-in. by 8-in. by $8\frac{1}{2}$ -ft.

hardwood ties, all tie plated. It is ballasted with several inches of chat on top of a substantial depth of crushed and washed gravel, with a sub-ballast of pit-run gravel. The road was built in 1853, so the embankment was thoroughly settled and compacted, and it was in a dry condition throughout the test.

The test was made under the general direction of our mechanical assistant to the executive vice president and under the direct supervision of our engineer of tests, with assistance as needed from any and all departments. We received valuable and appreciated assistance from Dr. A. N. Talbot and his staff, G. M. Magee, research engineer of the A. A. R., Messrs. Buckwalter and Horgan of the Timken Company, and Mr. Martin of the Eastman Kodak Company.

In preparing for the test, a section of the test track was greased so that the locomotive drivers might be slipped to a high revolving speed; 50 depression gages and 2 depression indicators were placed along the rail, movie cameras being used in conjunction with the latter; and a bench mark was established so that the elevation of the top of both rails could be determined with reference to the bench mark both before and after the test runs were made.

Test runs were made with six locomotives, each pulling a baggage car, a dynamometer car and four steel coaches. The engines were carefully checked as to method and amount of counterbalance; three moving picture cameras were mounted on platforms on each locomotive, two on the right side and one on the left side, one of these taking 400 frames per second. The cameras were directed at the drivers and the rail, the drivers being painted with distinctive marking so that their position at all times could be known. The trains entered the greased track at various speeds and were slipped to different speeds, depending on the engines being tested, steam being worked until the test was complete.

Three of the engines tested and the results were as follows:

Type S-4, No. 3012, a 4-6-4 passenger engine with plain bearing driving boxes, heavy rods and reciprocating parts; weight of these parts on one side, 2,109 lb.; front and back drivers overbalanced 245 lb., main driver 315 lb.; 38 per cent of the reciprocating weight balanced; dynamic augment of main driver at 80 m. p. h., 14,845 lb.; at 110 m. p. h., 28,066 lb.; maximum slipping speed 108 m. p. h. In tests with this engine, a number of rails were bent a maximum of $\frac{1}{8}$ in. down and $\frac{3}{32}$ in. inward, as measured with a 3-ft. straightedge.

Type S-4, No. 3001 engine, same as the above in every respect, except that it was equipped with roller bearings on the drivers instead of plain bearings. Maximum slipping speed 100 m. p. h. Results—some additional rails bent.

Type S-4-A, No. 4003, high-speed passenger engine with roller bearings on drivers and rods; light-weight rods and reciprocating parts; weight of reciprocating parts on one side 1,026 lb., 52 per cent lighter than the S-4; all drivers overbalanced 102.6 lb.; 30 per cent reciprocating weight balanced; dynamic augment of main driver at 80 m. p. h., 4,835 lb.; at 110 m. p. h., 9,141 lb., and at 120 m. p. h., 10,879 lb., maximum slipping speed 128 m. p. h. Results—no damage to the rail. The other engines tested were two heavy and fast freight or passenger engines and one heavy, fast-freight engine. The results were, in general, the same.

Observations made during the tests and later study of the moving pictures demonstrated that in all cases, if the speeds were high enough, the main driver left the rail at least slightly. The important difference, depending upon

the engine, was in the speed at which this occurred and the extent of the damage done to the rail. The first and third engines tested were almost identical, except for the type of bearing, the weight of the reciprocating parts and the amount of overbalance. The main driver of each left the rail approximately one inch, but in the case of Engine 3012, with heavy parts, this occurred at 108 m. p. h. and the rail was damaged seriously. With Engine 4003, with light parts, it occurred at a speed of 128 m. p. h., but no damage that we could detect was done to the rail.

The track in each case was, of course, identical; stronger and in perhaps somewhat better than average condition, yet in one case very serious damage was done and in the other there was no damage. The difference was entirely in the engines. We know what it costs to build an engine such as the 4003 as compared with the 3012. I do not know and I am sure no one knows what it would cost to build a track that the 3012 would not damage at 108 m. p. h. or the higher speeds that might be attained. Even if we did know such cost, when we would multiply this by the number of miles of such track that would have to be built to carry the high speed trains operating at present, the cost would become staggering. Speaking as a trackman, I feel that the burden is on the mechanical engineers. We are confidently depending on them to make good.

Freight Traffic Less Damaging

So far the consideration of our subject has been confined almost entirely to passenger train equipment and speeds. I think that is justified because it is in passenger service that the increase in speed has been greatest during the last few years; but I do not wish to suggest that study of freight service equipment and speed should be neglected. It is passenger service and speed that make necessary the very highest standard of construction and maintenance of the permanent way, and the most careful design, construction and maintenance of equipment. However, freight traffic is responsible for wear on the track structure to a much greater extent than is passenger traffic, at least on most lines, and especially since the demands of the present day make it necessary to operate freight service at speeds which a few years ago were thought of only for passenger service. Much has been done to improve freight equipment, both motive power and cars, and every one realizes that much more must be done in the way of developing light weight equipment, not only to minimize damage to the track structure, but also from the standpoint of operating economy. Here again it is a question of the ability of the roads to finance the program.

However, as speed in passenger service is so much greater than in freight service, it is in the former that the pioneering research and development must be done. The same principles and practices that are found to work out best in passenger service will apply equally well in freight service, modified as may be necessary to fit the service and dictated by economies. From the trackman's standpoint, freight service speed, fast though it is, does not present the perplexing problems encountered in attempting to maintain a track structure adequate for present passenger train speeds.

I wish to mention one other group of tests made recently by our mechanical department and to stress the importance of what they developed. These tests show beyond doubt that quite frequently the drivers of locomotives operating under ordinary conditions suddenly slip and attain a revolving speed of at least 25 to 30 m. p. h. above the running speed. They also show that under this

condition the engine sometimes moves forward from one-quarter mile to more than a mile before the drivers again settle down to normal revolving speed. When this occurs, we have exactly the condition produced in the slippage tests. With running speeds of 85 to 90 m. p. h., which are not unusual, the tests made show conclusively what happens to the rail, unless the equipment is designed, built and maintained for the speed at which it is to be operated.

As the Mechanical Man Faces It

By Kenneth Cartwright*

Until a few years ago in this country, the generally accepted practice in counterbalancing a locomotive was what is known as static balancing. Now the recommended practice of the Association of American Railroads is to cross counterbalance the main wheels and statically balance the front and back wheels. Let us consider for a moment just what static balancing and cross counterbalancing really amount to, as regards rotating weights, only. When we statically balance a pair of driving wheels we put a balance weight in the counterbalance opposite the pin which will balance the weight of the rotating parts carried on the pin. This wheel is then said to be balanced, and it is, if you consider the wheel to be balanced when standing still. Unfortunately, however, a locomotive driving wheel is usually moving, and hence the wheel which may be perfectly balanced statically, will be found not to be balanced dynamically. This is due to the fact that the different rotating weights are not acting in the same plane, so that couples are set up which are unbalanced; thus essentially the static balance method simply balances forces, while the cross counterbalance method balances couples.

Lawford Fry has evolved a very simple, clear-cut analysis, and the following diagrams are based on his method. It can be shown that for a dynamic balance it is necessary to apply two weights—one in the adjacent wheel 180 deg. from the pin and one in the opposite wheel at 90 deg. from the pin. The opposite wheel requires a similar balance and consequently the effect of the rotating parts carried by the main crank pin and counterbalance is the same as would be produced if each wheel carried in the plane of its counterbalance, two equivalent weights, one opposite to the pin and another at 90 deg. from the pin. Fig. 1 shows the balance conditions in the New Haven Class I-5, or 4-6-4 type locomotive purchased in 1937, according to the A. A. R. formula in which the main wheel is cross balanced, and the front and back wheels are statically balanced.

In these diagrams, where cross-balancing or the cross effect of the rotating parts are considered, the forces indicated in the upper right hand quadrant of the wheel represent the vertical and horizontal components of the effect of the rotating parts in the plane of the counterbalance. The forces in the lower left hand quadrant similarly represent the vertical and horizontal components of the counterbalance in the plane of the counterbalance. Resolving the two vertical and horizontal components we get a single vertical and horizontal component which has a resultant. This resultant is the unbalanced force in the wheel acting to produce dynamic augment. The resultant vertical component is the force in the wheel acting to produce reciprocating balance. In all of the counterbalance formulas the basis has been a percentage of reciprocating balance which in this case was set at 40 per cent of the reciprocating weight, the reciprocating

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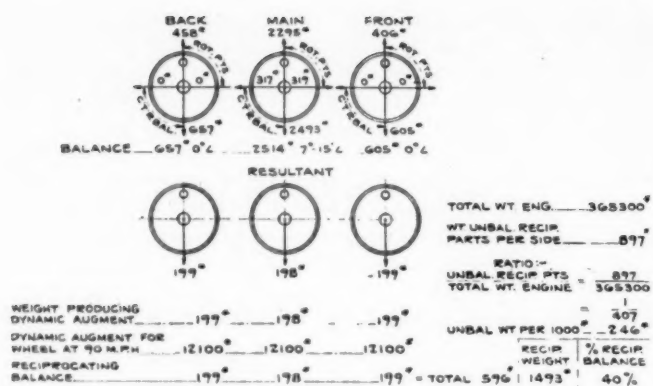


Fig. 1—Counterbalance Chart for New Haven Class I-5, 4-6-4 Type Locomotive Balanced According to the A. A. R. Formula

cating balance being divided evenly among all three wheels. This figure shows the dynamic augment and reciprocating balance, ratio of unbalanced reciprocating parts per side to the total weight of the locomotive, and the unbalanced reciprocating weight per thousand pounds mass of the locomotive, as derived from the present A. A. R. formula.

Static Balance Not Feasible on a Locomotive

However, static balance is a physical impossibility on a locomotive. If we consider the same locomotive and the same counterbalance conditions, but take into consideration the cross effect of the front and back wheels, that is consider the out-of-plane condition of the revolving weights and the counterbalance, we find that the actual reciprocating balance is not 40 per cent as determined by the A. A. R. formula, but 35 per cent, with a corresponding difference in the ratio of the unbalanced reciprocating weight and the amount of unbalanced reciprocating weight per thousand pounds. There is, however, in the customarily accepted method of calculating counterbalance, an error that may creep in with respect to the amount of rotating weight that is balanced. It has been customary in the counterbalance calculations to consider the scale weight of the back end of the main rod as rotating and the front end weight as reciprocating.

I am indebted to G. M. Magee, research engineer, A. A. R., for calling this to my attention, and you will find that Henderson in 1907 in his book "Locomotive Operation," page 57, recognized that the proper division of back and front end weight requires a determination of the radius of gyration. He suggested that the radius of oscillation be found experimentally by swinging the rod as a pendulum. His practical conclusions for main rod designs prevailing at that time were "one-half of the weight of the main rod is not far wrong for an approximation as to the balance needed to be added to the main wheel considered as acting at the crank pin radius." In main rods of modern design it will be found that from 84 per cent to 89 per cent of the scale weight on the main pin produces the dynamic effect of the back end of the rod. While not strictly technically correct in all cases, I believe it will be sufficiently accurate to consider $\frac{7}{8}$ of the scale weight of the back end of the main rod as producing rotative dynamic effect, when considering main rods of present design.

Fig. 2 shows the same engine with counterbalance conditions calculated considering the cross effect of the front and back wheels, and, in addition, the effect produced by considering seven-eighths of the scale weight of the back end of the main rod on the pin as rotative

weight instead of full scale weight. You will note that this changes the situation materially with respect to the main wheel, and that considering the effect of rotating parts and counterbalance, we arrive at a net vertical component acting downwards of 293 lb., and a horizontal component acting to the left of 16 lb., giving a resultant of 293 lb. acting at an angle of 3 deg. 7 min. back of the pin. This resultant produces a dynamic augment of 17,800 lb. at 90 miles an hour instead of 12,100 lb., or an increase in dynamic augment of 47.1 per cent over that calculated by the A. A. R. formula. This increase is real. The reciprocating balance is correspondingly increased from 198 to 293 lb. The percentage of reciprocating balance and unbalanced reciprocating weight per thousand pounds changes only slightly, owing to the increase in reciprocating weight caused by the addition of the portion of the main rod heretofore considered as rotating weight. This really gives a true picture of the balance conditions obtaining on this engine as built, and since the dynamic augment varies as the square of

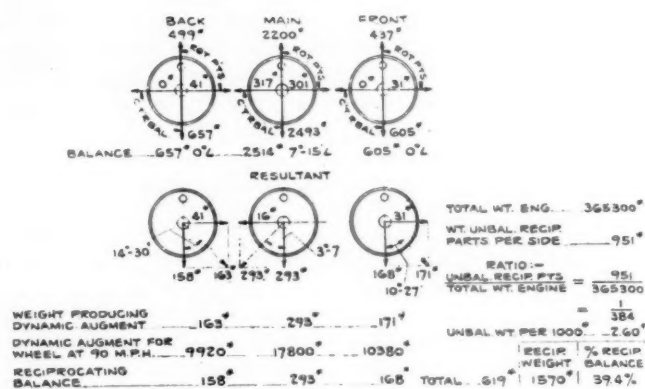


Fig. 2—Class I-5 as Originally Balanced, Considering the Cross Effect, Front and Back Wheels, and Weight of Main Rod on Pin as % Scale Weight of Back End

the speed we would have a dynamic augment of 31,600 lb. at 120 miles an hour. This still is slightly below the static wheel load, which is 32,150 lb. In the main wheel, however, in addition to the forces acting on the rail due to the unbalanced resultant of the counterbalance, we have two forces which are usually not considered. These are the vertical components of the piston thrust carried through the main rod and vertical component of the force produced by the inertia of the reciprocating parts. These forces added to the effect of the counterbalance would undoubtedly exceed the static wheel load.

Excessive Wheel Vibration at Critical Speeds

In connection with the slipping tests which we made we noted a very marked periodicity or resonant effect in the main driver of our I-5 locomotives, and this indicated strongly that something was occurring in addition to the usual action of the overbalance which was causing a forced vibration of the main driving wheel on the rail. It can be shown mathematically that the locomotive may be treated as a system having a dead weight or mass interposed between a sprung weight and an elastic supporting structure. Such a system has definite critical frequencies and, if the driving wheels rotate near such critical speeds, then forced vibrations will be produced by the overbalance. It is realized that ideal conditions do not usually obtain in actual practice, but this theory does definitely tie in with observed results, and it also will explain why our I-4 class locomotive when slipped

did not damage track, even though the dynamic augment of the main driver was practically the same as the I-5 locomotive. The unsprung weight of the main drivers on the I-5 locomotives is 21,700 lb. and on the I-4 locomotive 14,800 lb. The unsprung weight of the front and back drivers on our I-5 locomotives is approximately 13,500 lb. Inasmuch as the critical frequencies are a function of the mass it seems logical to assume that the reason we did not damage track when the I-4 locomotive was slipped was simply due to the difference in critical frequency caused by the difference in unsprung mass, and that if we could have slipped the I-4 engine up to a speed where the frequency of the rotating unbalance began to approach the critical frequency of the unsprung mass, then we would have developed a condition similar to what was produced on the I-5's.

In order to demonstrate clearly the difference between static and cross-balancing, a counterbalance chart similar to those illustrated indicates the actual conditions that would prevail on this locomotive if it had been statically balanced on all wheels having an assumed reciprocating balance of 40 per cent. In this case there is an actual deficiency of reciprocating balance in the main wheel, and the dynamic augment at 90 miles an hour is 18,350 lb. as compared to 17,800 lb. for the cross-balanced wheel, and that instead of 40 per cent reciprocating weight balance there would actually have been only 19.1 per cent reciprocating weight balanced.

As a result of the slipping tests on these locomotives, 100 pounds was taken out of the over balance in the main wheels, leaving the angle of balance unchanged.

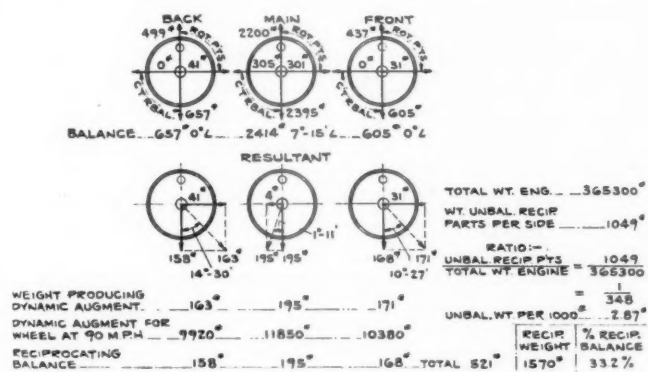


Fig. 3—Class I-5 with Original Main Wheels, Considering the Cross Effect, Front and Back Wheels, and Weight of Main Rod on Pin as 1/2 Scale Weight of Back End, and with Overbalance Reduced by 100 Lb. in Main Wheel

Fig. 3 represents the conditions prevailing after this was done, and you will note as compared to the condition as shown in Fig. 2 covering the original balance that the resultant producing dynamic augment in the main wheel was reduced from 293 lb. to 195 lb., with a consequent reduction in dynamic augment at 90 miles per hour from 17,800 to 11,850 lb., or a reduction of 33.4 per cent. The reciprocating balance was reduced to 33.2 per cent and the unbalanced reciprocating weight per thousand pounds to 2.87 lb.

At this point it might be well to consider our reasons for attempting to balance a portion of the reciprocating weight. As stated at the beginning of this paper the unbalanced reciprocating forces set up a couple which tend to produce nosing. On modern locomotives which have a large polar moment of inertia the nosing effect is not as pronounced as it was on older locomotives, and as we have seen, there are other factors tending to produce nosing besides the unbalanced reciprocating parts. The unbalanced reciprocating parts, however, do pro-

duce another effect which is a direct longitudinal shaking or vibration of the locomotive, and while not strictly correct it is essentially true that the resultant shaking force is proportional to the ratio of unbalanced reciprocating parts to total weight of locomotive, or putting this in another manner to the unbalanced weight per thousand pounds of locomotive. The crux of the whole counterbalancing situation depends on how much unbalanced reciprocating weight can be allowed in proportion to the total weight of the locomotive, and not on the per cent of reciprocating parts balanced. These locomotives have been running in a condition as indicated in Fig. 3 now for over a year with absolutely perfect riding qualities, and in slipping tests made with one of these engines after the 100 lb. overbalance had been taken out there was no fore and aft vibration introduced while slipping, and there was no rail damage.

Considering the dynamic effect of the back end of the main rod, however, this engine as now balanced is not correct, and Fig. 4 shows the balance conditions that would obtain on this engine when it is necessary to apply new main driving wheels which have already been designed with the balance calculated in accordance with the principles that have been outlined, namely that the rotative effect of the back end of the main rod is seven-eighths of the scale weight. You will note also from this that the overbalance on the main wheel has been reduced to 100 lb., and that the dynamic augment at 90 miles per hour is 6,075 lb. instead of 17,800 lb. or a reduction of 65.9 per cent in dynamic augment at 90 miles per hour over the original balance conditions. The reciprocating balance obtained in this condition will be 27.2 per cent and the unbalanced reciprocating weight per thousand pounds will be 3.13. From experience with other engines which we have had in service for years we do not feel that this condition will cause any noticeable fore and aft vibration or shaking effect.

Cross-counterbalancing Front and Back Drivers

There have been arguments pro and con concerning the cross-balancing of the front and back wheels, as well as the main. From the standpoint of reciprocating balance it makes very little difference whether the front and back wheels are cross-balanced. The percentage of reciprocating balance is increased from 27.2 per cent to 31.5 per cent and the unbalanced reciprocating weight per thousand pounds reduced from 3.13 to 2.95. It is extremely doubtful if this slight reduction in ratio of unbalanced reciprocating weight to mass would produce any noticeable effect in the locomotive.

Finally, in case there might be some question as to

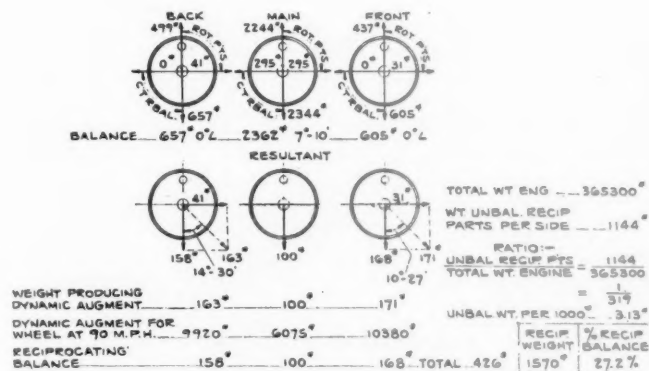


Fig. 4—Class I-5 with New Main Wheels, Considering the Cross Effect, Front and Back Wheels, and Weight of Main Rod on Pin as 1/2 Scale Weight of Back End, and with Overbalance Reduced to 100 Lb. in Main Wheel

the riding qualities of this locomotive with the 100 lb. taken out of the counterbalance on the main wheel or with the new design of main wheel, a counterbalance chart illustrating the actual conditions obtaining on our I-4 locomotives which have been in service for 20 years in through main-line passenger service run at just as high speeds as we are running the I-5 locomotives, and with the wheels balanced according to the old A. A. R. static formula, having 40 per cent reciprocating balance, will show that the reciprocating balance obtained is 34 per cent, which is practically the same as was obtained in our I-5 locomotives. The actual unbalanced reciprocating weight per thousand pounds is 3.85 as against 2.60 for the I-5 engines originally and 2.87 for the engine as it is running today.

Our experience, therefore, clearly indicates that on a modern-high speed locomotive, in order to eliminate the possibility of rail damage due to slipping at high speed, the actual equivalent overbalance in the main wheel should not be greatly in excess of 100 lb. This at once demonstrates the importance of lightweight reciprocating parts, although our experience shows that the desired results can be obtained with reciprocating weights per side in the neighborhood of 1,500 lb. in a 4-6-4 type locomotive. If a high speed locomotive is desired with power beyond the capabilities of the 4-6-4 arrangement, consideration of the foregoing factor would lead to the conclusion that a 4-4-4-4 wheel arrangement should be used rather than a 4-8-4. By so doing the total piston thrust is divided and reciprocating weights can be held within limits which might prove difficult with a 4-8-4. While the common practice heretofore has been to divide the overbalance for reciprocating parts evenly between all driving wheels there is no real necessity for so doing, and decreasing the reciprocating balance provided in the main wheel will help to offset the effects of the piston thrust and force due to inertia of the reciprocating parts which are not present in the other wheels.

One Important Ratio Now Being Overlooked

The one thing definitely lacking today is concrete information as to just what reciprocating balance is necessary on a modern locomotive. Investigation of foreign practice discloses counterbalance practices varying all the way from 60 per cent of the reciprocating parts balanced down to 6 per cent with numerous examples of 20 per cent of the reciprocating parts being balanced. I have indicated, however, that the percentage of reciprocating parts balanced does not give us a true picture and we need to know the ratio of unbalanced reciprocating weight to total mass of locomotives of the unbalanced reciprocating weight per thousand pounds of mass. If reciprocating balance was expressed in either of these two ways instead of as a percentage of the reciprocating weight, direct comparisons could be made. I believe it is well worth while both from the standpoint of the mechanical officer and the maintenance officer who is concerned with the effect of locomotive on his track to develop definitely the maximum unbalanced reciprocating weight per thousand pounds of mass of the locomotive that can be used without affecting the riding qualities and maintenance of the locomotive. This could be done experimentally by bolting temporary weights to the wheels, gradually reducing the overbalance until a point is reached at which the riding qualities of the locomotive are affected. Such information would be of great value to the mechanical officer who would then have a definite guide as to how far he could reduce reciprocating balance with the consequent reduction in dynamic augment which is the main cause of the rail damage.

Pullman, Inc.

THE annual report of Pullman, Inc., for 1938 shows net earnings of \$2,295,829 after all charges and taxes, as compared with \$12,275,950 in 1937. These earnings accrued from three major lines of business activity, the sleeping car and manufacturing business and security investments. In the sleeping car business, earnings were \$2,504,266, as compared with \$5,650,927 in 1937. In the manufacturing business earnings amounted to \$239,933, compared with \$9,059,115 in 1937, the difference reflecting the severe shrinkage in car orders in 1938. Earnings of \$862,923 were realized from security investments. The net working capital at the end of the year amounted to \$64,171,322, as compared with \$67,539,191 at the end of 1937. The total of cash and government securities, exclusive of those held in reserve funds, was \$49,292,978. Current assets totaled \$74,320,443 and current liabilities \$10,149,120.

Sleeping Car Operation

In the report to stockholders, D. A. Crawford, president, said, "The contraction in Pullman travel engendered by the 1937 collapse in general business activity continued in 1938 and became more marked during the third quarter of the year as the result of the absence of the normal volume of summer tourist travel and the failure of commercial travel, the backbone of the Pullman business, to respond in proportion to the improvement in general business activity. However, the fourth quarter was characterized by a narrowing rate of decline that contrasted favorably with the sharp decreases registered in preceding months.

"The rate increase of 5 per cent allowed by the Interstate Commerce Commission and made effective August 1 failed to restore a normal margin between revenues and expenses, as the potential revenue-increase from the higher rates was nullified by the continuing slump in traffic volume, with the result that gross revenues for the full year dropped 8 per cent below 1937 and receded to the level obtaining in 1936.

"A substantial number of new-type lightweight sleeping cars were placed in operation during the year. The response of the traveling public to the new installations has been enthusiastic, and the heavy passenger loadings consistently obtained on the streamliners has yielded satisfactory financial results. Additional new-type lightweight Pullman equipment now in course of construction will be in operation on Eastern trunk lines by mid-1939. High speed betterments have been installed in several trains of standard Pullman cars recently remodeled for the New York-Florida and the Chicago-Washington services, and are now receiving increasing patronage from the traveling public.

Manufacturing Business

"Reflecting the sharply restricted volume of equipment ordered by the railroads during the last year and a half, production and earning of the manufacturing subsidiaries were severely depressed in 1938. Manufacturing plants and organizations have been adequately maintained and are in good position to handle any increased demand for new equipment.

"The Pullman-Standard manufacturing subsidiary has maintained active and effective participation in the development of new types of passenger train equipment, and in 1938 built 231 lightweight car units out of a total of 288 delivered that year by all builders. Over 500 Pullman-built new-type passenger units are now in opera-

tion on the nation's railroads, in addition to over 200 lightweight Pullman sleeping cars, all of which are playing an important part in improving the competitive position of the rail passenger services.

Research

"There has been continuous effort to improve the services and products supplied by the corporation's subsidiary companies. The results of intensive investigation by Pullman engineers, supplemented by related experience

Board that the stated value of the capital stock of the corporation be reduced from \$50 per share to \$40 per share, and that the amount of such capital reduction in the outstanding shares be credited to surplus. Upon approval by stockholders, \$33,143,225 will be appropriated out of surplus to eliminate the entire remaining balance of the 1927 appraisal increase in the valuation of the carrier subsidiary properties, represented in depreciable property of \$32,042,189 and in land of \$1,101,035, now reflected in property and surplus accounts.

Total taxes of \$5,506,039 paid or accrued by the cor-

Traffic and Operating Statistics

ITEM	COMPARATIVE STATEMENT FOR YEARS ENDED DECEMBER 31				
	1934	1935	1936	1937	1938
CARS OWNED.....	8,473	8,027	8,004	7,763	7,578
CARS OPERATED.....	5,029	5,057	5,355	5,500	5,124
CAR MILES.....	737,167,857	758,554,032	825,945,721	872,598,392	818,481,116
REVENUE PASSENGERS:					
Berth.....	10,258,642	10,624,818	12,049,359	12,849,076	11,338,471
Seat.....	4,846,707	4,853,890	5,148,377	4,895,492	4,201,378
TOTAL.....	15,105,349	15,478,708	17,197,736	17,744,568	15,539,849
REVENUE PASSENGER MILES.....	6,891,002,293	7,146,269,648	8,354,840,293	9,170,428,451	8,269,882,057
REVENUE FROM CARS.....	\$ 44,523,817	\$ 46,758,260	\$ 52,645,993	\$ 57,666,648	\$ 54,444,640
Average per Car.....	\$ 8,853.77	\$ 9,246.43	\$ 9,830.82	\$ 10,484.46	\$ 10,624.59
EXPENSES.....	\$ 44,124,174▲	\$ 48,405,241▲	\$ 49,191,772▲	\$ 53,447,531▲	\$ 52,941,643▲
Average per Car.....	\$ 8,774.29▲	\$ 9,572.12▲	\$ 9,185.80▲	\$ 9,717.38▲	\$ 10,331.29▲
NET EARNING FROM CARS.....	\$ 399,643⊕	\$ 1,646,981*	\$ 3,454,221⊕	\$ 4,219,117⊕	\$ 1,502,997⊕
TRAFFIC AVERAGES:					
Average Revenue per Passenger.....	\$ 2.95	\$ 3.02	\$ 3.06	\$ 3.25	\$ 3.50
Average Net Earning per Passenger.....	\$.03	\$ 0.11*	\$ 0.20	\$ 0.24	\$ 0.10
Average Net Earning per Car per Day.....	\$ 0.22	\$ 0.80*	\$ 1.76	\$ 2.10	\$ 0.80
Average Mileage per Car Operated.....	146,589	150,004	154,232	158,648	159,722
Average Journey per Passenger (Miles).....	456	462	486	517	532
Average Miles per Car per Day.....	402	411	421	435	438
Average Loading per Car (Passengers).....	9.35	9.42	10.12	10.51	10.10

*Figures in *italics* denote loss.

▲Includes Pullman proportion of expense of operation of air conditioning equipment.

⊕After provision for Federal Taxes.

of other research agencies, have determined the choice of carbuilding materials and processes used by Pullman in the construction of the new types of passenger equipment.

"Extensive service use and experience with the most severe forms of collision damage have confirmed the soundness of the engineering practice applied in the selection of the materials and designs employed in Pullman-built lightweight equipment. In a series of comparative tests of light and heavyweight passenger equipment conducted under the supervision of an authoritative railroad engineering organization, the Pullman-built lightweight car successfully complied with the basic strength requirements of the U. S. Railway Mail Service that have for years been the accepted standard for passenger car design. All of the Pullman-built light-weight passenger cars now in operation meet those requirements fully."

Equipment and Property, Additions and Retirements

Additions to equipment and property totaled \$13,956,325, while retirements of cars and other property amounted to \$10,695,077, leaving net additions of \$3,261,248. During the year there were installed 157 Pullman general service cars, new and rebuilt, and 342 cars of obsolete types were retired, leaving a total of 7,578 cars of all classes on the equipment list of the carrier subsidiary at the close of 1938. There were 4,957 air conditioned Pullman cars in operation at the end of 1938, out of an estimated total of 11,000 air conditioned cars of all ownerships on the country's railroads. Some further increase in the number of air-conditioned Pullman cars is scheduled for 1939, although a large proportion of the active fleet is already equipped with this modern facility.

A special meeting of stockholders will be called on April 19, 1939 to act upon a recommendation by the

poration and its subsidiaries in 1938 absorbed more than 70 per cent of the consolidated net income before provision for such taxes and were equivalent to \$1.42 per share on the outstanding capital stock.

* * *

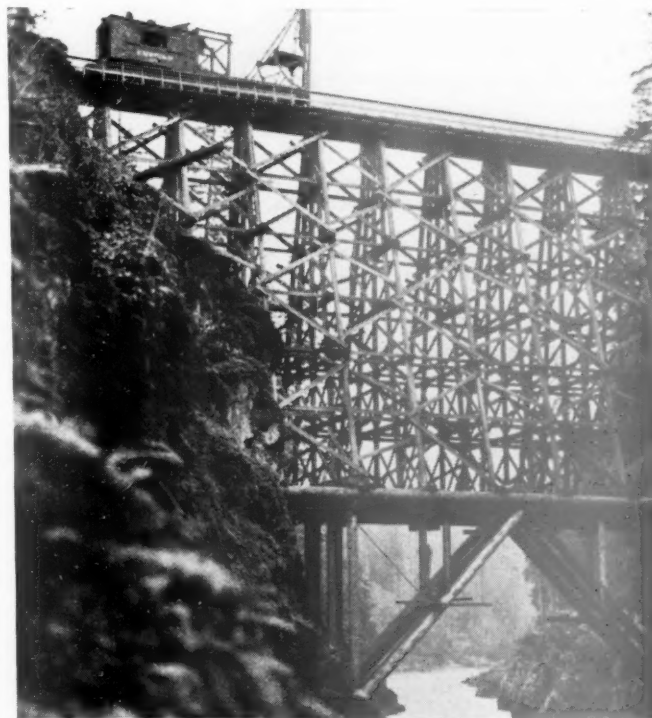


Photo courtesy C. C. & C. R. R.

This All-wood Bridge Carries the Cowlitz, Chehalis & Cascade 165 Feet Above the Cowlitz River, 25 Miles East of Chehalis, Wash. Built in 1927, the Bridge Contains 367,000 Board Feet of Lumber and Required Logs from 100 to 120 Feet Long for the Trusses

I. C. C. Legislative Proposals

House committee on interstate and foreign commerce
receives regulatory body's comment
on pending measures

WASHINGTON, D. C.

CHAIRMAN LEA of the House committee on interstate and foreign commerce on March 23 made public the Interstate Commerce Commission's recommendations for transportation legislation. The recommendations are embodied in an 80-page letter signed by Commissioner Eastman as chairman of the commission's legislative committee and submitted as a reply to Mr. Lea's request of February 25 for I. C. C. comment on proposals pending before the House committee.

In making public the I. C. C. reply, Chairman Lea called it "an able report which helps to clarify the situation." He added that "it's going to contribute toward getting useful legislation, I think, at this session." Previously Mr. Lea had indicated that he would not press for enactment of that provision in his omnibus bill calling for a 19-man three-division I. C. C.

Summary of I. C. C. Conclusions

Mr. Eastman's summary of the I. C. C. conclusion reads as follows:

(1) We favor comprehensive regulation by the Interstate Commerce Commission of all common carriers by water, and of all contract carriers competitive therewith, engaged in interstate or foreign commerce in all the domestic trades.

(2) With respect to proposed changes in regulatory provisions:

(a) We do not favor the changes in the so-called "rate-making rule" proposed by the Committee-of-Six.

(b) We favor, with a change in its wording, the amendment of section 5 (1) of the Interstate Commerce Act with respect to the pooling or division of railroad traffic and earnings proposed by the Committee-of-Three (the Splawn-Eastman-Mahaffie Committee and in H. R. 2531.

(c) We favor the amendment of the consolidation provisions of section 5 proposed by the Committee-of-Three, the Committee-of-Six, and H. R. 2531, but on the whole prefer, in some respects, the form which the amendment takes in the bill of the Committee-of-Six. We do not, however, favor repeal of paragraphs (19)—(21) or change of the present provision of section 213 (a) of the Motor Carrier Act with respect to acquisitions of motor carriers by railroads.

(d) We do not favor repeal of section 4 of the Interstate Commerce Act or of the so-called long-and-short-haul clause of that section.

(e) We do not favor the amendment with respect to intrastate rates proposed by the Committee-of-Six.

(f) We do not favor the amendment of the reparation provisions of the Act proposed by the Committee-of-Six.

(3) We do not favor the reorganization of the Commission proposed by the Committee-of-Six or in H. R. 2531, but do urge amendments, which would

(a) Enable the Commission to delegate work, business, and functions without restriction to individual commissioners or board of employees, subject to opportunity for review by a division of the Commission, and under certain conditions by the Commission itself.

(b) Enable the Commission to establish by general rules limitations on the right of parties to seek review by the Commission of the action of a division or individual commissioner or board of employees, such limitations to confine the oppor-

tunity to proceedings of certain classes or descriptions involving issues deemed by the Commission to be of general transportation importance; and to create one or more appellate divisions to which petitions for rehearing generally, or in particular cases or classes of cases, could be assigned for final action.

(4) We favor the recommendation of the Committee-of-Three that a Federal Transportation Authority of three members, to be appointed by the President, be created for a temporary period to carry on in behalf of the Government specified research, planning, and promotional work in connection with transportation.

(5) We do not favor the proposal of the Committee-of-Six that the Commission be relieved of all responsibility in connection with railroad reorganizations either in equity receivership proceedings or under Section 77 of the Bankruptcy Act, and that a new Reorganization Court be vested with all the jurisdiction now exercised by both the district courts and the Commission over all matters connected with such railroad reorganizations. Nor do we advocate the somewhat similar, although more limited, proposal in H. R. 2531 for the creation of a Railroad Reorganization Court.

(6) With respect to loans to railroads, we favor none of the proposals, except those of the Committee-of-Three (a) that \$300,000,000 be made available for loans to finance the purchase of rolling or shop equipment, the latter to furnish the security for loans, and (b) that obligations to the Reconstruction Finance Corporation be accorded, in bankruptcy proceedings, a position with respect to realization on collateral similar to that now given to equipment obligations.

(7) We favor the proposals of the Committee-of-Three, the Committee-of-Six, and H. R. 2531 that the requirements in existing statutes for so-called "land-grant reductions" in connection with the carriage by the railroads of Government traffic be removed.

(8) With respect to miscellaneous proposals of the Committee-of-Six,

(a) We express no opinion on the recommendation that Congress provide for the immediate disposal of the Federal Barge Lines operated by the Inland Waterways Corporation.

(b) We express no opinion on the various proposals with respect to taxation.

(c) We approve as sound in principle the proposal that the railroads be relieved from the burden of contributing, disproportionately, to the cost of grade crossing eliminations.

(d) We approve as sound in principle the proposal that wherever a railroad is required, in connection with the improvement of navigable waters, to alter or reconstruct any of its bridges or other facilities, it shall be reimbursed by the Government for all cost in excess of direct benefit.

(e) We approve as sound in principle the proposal that no reorganization plan shall be approved unless the fixed charges for which it provides are within the ability of the property to earn at all times, as demonstrated by its past experience.

The proposals contain little that is new. In substance most of them have been made before, and deviations are chiefly in form. This is not surprising, for after all there are only a few basic ways in which transportation conditions can be improved by Government action. Relief may be obtained by better control of competitive conditions, or by increasing the internal efficiency of the carriers, or by improving their financial structures, or by loans from or decrease in burdens imposed by the Government.

The Committee-of-Six, quite naturally in view of its composition, emphasizes the betterment of competitive conditions and

minimizes efforts to increase internal carrier efficiency. The Committee-of-Three put most stress on the latter means of improvement. H. R. 2531 tends to emphasize the former, but does not neglect the latter. For our own part, we regard as of paramount importance efforts to bring about a proper integration of carriers of all types and to increase the economy and efficiency of their operations. As we stated in our last annual report, "Transportation success can never be the product of high rates and restricted service."

Our reports upon the regulation of so-called "forwarding companies" and upon the extent to which control over private transportation would be practicable and desirable will be separately submitted. . .

Meanwhile the hearings on Chairman Lea's omnibus bill have continued with testimony from additional witnesses, including Major General T. Q. Ashburn, chairman of the government-owned Inland Waterways Corporation; Tom J. McGrath, general counsel of the Brotherhood of Railroad Trainmen; Luther M. Walter, co-trustee of the Chicago Great Western; J. M. Hood, president of the American Short Line Railroad Association; and Marcus L. Bell, general counsel for the Chicago, Rock Island & Pacific. The hearings were expected to be concluded by April 1 after the Interstate Commerce Commission and the Reconstruction Finance Corporation are heard at next week's sessions.

"Don't Take Away Our Privileges"—Marine Plea

The first of the witnesses appearing subsequent to those whose testimony was reported in last week's issue was Ira L. Ewers of the American Merchant Marine Institute, who said that his organization could not accept as being in good faith a proposal for co-ordination which contemplates repeal of the long-and-short-haul clause or a commodities clause that would cause many of the Institute's members to discontinue operations. In response to Chairman Lea's inquiry as to what should be the fundamentals of co-ordination, Mr. Ewers replied that proper co-ordination, in the view of the Institute, should leave each carrier "in its own economic field;" and one carrier "shouldn't be regulated for the benefit of another." The witness added in explanation that the railroads should not be permitted to operate in competition with water lines on rates based on "some vague and illusory theory of out-of-pocket costs."

Chairman Lea then asked if "as an abstract proposition" it were fair to say that the Institute believed in unified regulatory control of all transport by some federal agency which would be competent, unbiased and fair. Mr. Ewers agreed that the foregoing would be a fair statement with the qualification that the cost of the regulation must be neither unreasonable nor excessive. The witness added that co-ordination proposals might get somewhere if the railroad proponents of such plans would leave out such things as the fourth section and the commodities clause and "other little tricky preferences for the railroads."

Speaking for the Pacific American Steamship Association, the Shipowners of the Pacific Coast and the Pacific Coast Protective League, Walter J. Petersen told the committee that the deep sea operations on the West coast have been the "most harrassed" of any industrial organization in the country. He cited strikes, the "most rigorous" regulation, and the necessity for coming to Washington from time to time "to attempt to prevent the passage of bills that will further depress us." Mr. Petersen was not on hand to "fight the railroads," but he believes that the railroads should not attempt to "Hitlerize our merchant marine." The witness went on to spend most of the remainder of his allotted time in arguing against repeal of the long-and-short-haul clause.

General Ashburn arrived early for his appearance at the March 17 session, bringing along a motion picture showing I. W. C. operations to exhibit to committee members before the session opened. This movie, the General later explained in answer to questions, was prepared at a cost of \$2,500 and it is being exhibited as part of the Corporation's publicity work. I. W. C. has a publicity director who is paid \$5,300 a year and who devotes his time "largely" to keeping informed of attacks on the Corporation and answering criticisms.

Testimony of General Ashburn

Beginning his prepared statement General Ashburn told the committee that it could consider as directed against itself every criticism of I. W. C.; because it was the House committee on interstate and foreign commerce that reported the original legislation creating the Corporation. He asserted that I. W. C. had made a 1938 "profit" of \$1,115,000 out of gross revenues of \$8,800,000, and went on to predict that if the railroads had been given the \$8,000,000 they could have made no such showing. All that the Federal Barge Lines ever got from the government, the general said, was \$12,000,000 in money and some equipment appraised at \$10,000,000 which couldn't have been disposed of for \$1,500,000. Today it could return to the government about \$28,000,000, and the Interstate Commerce Commission had fixed the replacement value at about \$23,000,000.

Looking over the report of President Roosevelt's committee-of-six, General Ashburn found only one recommendation that he favored. He believes that a transportation board should be created to investigate and report to Congress concerning the economic spheres of the various modes of transport and the extent to which any of them may now be subsidized. But the General wants such a study made in advance of any attempt to legislate on the transportation problem. As to regulation of water carriers, General Ashburn pointed out that the Lea bill would exempt private and contract operators; he believes the latter should be included if there is going to be regulation of common carriers on the waterways. The committee-of-six bill's proposal to levy tolls for commercial use of the inland waterways, the witness said, would reverse the government's tolls policy which dates back to 1787.

Denison-Act Stipulations Preclude Sale of I. W. C.

Addressing himself to the committee-of-six proposal to discontinue the Federal Barge Lines, General Ashburn declared that such a course of action would be contrary to the policy outlined in the Denison act. He disagreed with assertions in pending joint resolution offered by Senator Reed, Republican of Kansas, that the Denison-act conditions precedent to disposal of I. W. C. had been met. In that connection the General pointed out that all the channels have not been completed, and joint rail-water rates have not been fully established. Later Representative Mapes, Republican of Michigan, suggested that if conditions in the Denison act were to be met it would be a long time before the barge line could be sold. General Ashburn agreed, and he later told Chairman Lea that he thought Congress should deal with the question of disposing of I. W. C. in the light of present-day conditions. The matter of selling, the witness said, was up to Congress; but he thinks I. W. C. is "too big a thing to dissolve and break up."

General Ashburn's 1938 "profit" faded a bit when Representative Wolverton, Republican of New Jersey,

applied to it a few private-industry accounting principles. Hammering away at the General with a series of questions Mr. Wolverton brought out the fact that interest or dividends at three per cent on the government's \$25,000,000 investment would amount to \$750,000 a year; federal income taxes on the 1938 earnings would have amounted to about \$140,000; that the Corporation included in its 1938 income a \$35,590 profit from the sale of government bonds; it included in the 1937 income interest of \$127,468 on government bonds; and that federal relief funds in the amount of \$100,000 were spent to rehabilitate bridges of the Warrior River Terminal Railroad, an I. W. C. subsidiary, which were damaged by river improvement work. General Ashburn maintained in the latter connection that the government paid for damages inflicted on bridges of any railway by waterway improvements.

Continuing, Mr. Wolverton further brought out that the United States Workmen's Compensation Commission in 1938 paid personal injury claims against I. W. C. in the amount of \$19,338.92; that the barge line's 1938 postage bill would have been \$26,000 if it did not enjoy franking privileges; that its government rate on telegrams saved it \$12,000; and that its office space in Washington would cost about \$3,800 a year if paid for at the rate of \$1.75 per sq. ft. Since he retired from the Army, General Ashburn said, the Corporation has paid his salary.

Wolverton Interested in "Eminently Successful" I. W. C.

What interested Mr. Wolverton, the New Jersey congressman said, was the "modest" way in which General Ashburn had called attention not only to the I. W. C. "profit" but also to that of the Warrior River Terminal. Since these had been so "eminently successful" the questioner wondered if the General wouldn't point out how the railroads might "emulate" such a showing—suggest some legislation which might bring the same success to others. The witness did not feel competent to answer; if he were thus competent, he added, he'd be "drawing down the salary of the president of the Association of American Railroads." He did, however, venture a couple of suggestions as follows: Allow the railroads to consolidate as they want to; and allow them to cut down their fixed charges.

Seemingly unimpressed by the foregoing Mr. Wolverton persisted in his effort to get some "helpful suggestions" from one who was able to report such "splendid results." He asked the General if it would help to consolidate the railroads with I. W. C. The General laughed, saying that such would be a case of "Jonah and the whale." Since the General had "made it clear" that I. W. C. has been "eminently successful" Mr. Wolverton wanted to know how the failure of the government to sell the barge line to private interests could be justified. The witness cited the above-mentioned Denison-act conditions, adding that offers for the line have been received and were referred to the Secretary of War and the President.

Representative Martin, Democrat of Colorado, told General Ashburn that all waterway proponents coming before the committee had stressed the "inconsequential nature" of water transportation; and such testimony has raised in the mind of the Coloradan a question as to "how much a thing is worth that isn't worth anything." It seems to him that about all water transportation has is an ability to cripple the railroads; he can't "add together" the testimony of waterway enthusiasts who make out a case for water transport's "inconsequential nature"

while at the same time putting it forth as the "economic life preserver of the nation."

General Ashburn did not comment on the foregoing observations, and Representative Mapes proceeded to question the witness with reference to offers received from private interests desiring to take over I. W. C. The General is quite sure that the offers have come from substantial parties, and he estimates that the government would have to get somewhere near the I. C. C. valuation of \$23,000,000. However, he went on to cite the above-mentioned Denison-act conditions which he called "prohibitory" to any sale at this time. Asked by Mr. Mapes if the Secretary of War would attempt to sell under the present law, General Ashburn replied that he was "quite sure" that the Secretary doesn't consider it his duty to take the initiative in that connection. The initiative, the General went on, is expected to come from Congress; and the Secretary of War has told the I. W. C. chairman that he finds no indications "on the Hill" that anyone wants to sell.

Mr. Mapes did not want to take in "so much territory," so he asked General Ashburn for his own opinion. That "varies"—sometimes the General thinks the government should sell, and sometimes he thinks otherwise. He has told the Secretary of War that if he had the money he'd be glad to buy I. W. C. and operate it.

Trainmen Oppose Consolidation Proposals

General Counsel McGrath of the B. of R. T. set forth that organization's opposition to the consolidation provisions of both the original Lea bill and the committee-of-six bill in a prepared statement wherein he asserted that "such economies as may be expected to immediately result from consolidation will be attained largely at the expense of labor." Insisting the consolidations would not result in lower rates to the public, Mr. McGrath went on to ask what advantage it would be to the people of the country "to further increase the ranks of the unemployed." He thought it would be well to have the committee-of-six's proposed transportation board or any other government agency investigate the question of consolidation and "recommend the type of legislative regulation and control" to which consolidating railroads should be made amenable.

Meanwhile the B. of R. T. is "convinced that additional curtailment of railroad transportation service will not be necessary nor wise, if inequitable competitive conditions as between the several types of carriers are rationalized and if other reforms in railroad practices are brought about." Also, it thinks that the railroads might obtain substantial relief if they would institute reforms to wipe out various alleged "wasteful" practices brought to light in Senator Wheeler's investigation of railway finances. Mr. McGrath here cited Senator Wheeler's testimony in the wage case with its estimate that such practices are causing the carriers to "waste" \$1,000,000 a day.

"Railroad labor," the B. of R. T. general counsel said at another point, "has already suffered the sacrifice of a million jobs. There is no reason why it should acquiesce, by implication or otherwise, in legislative proposals which will tend to further restrict the opportunities for employment on the railroads of the country. H. R. 4862 (the committee-of-six bill) provides no adequate protection for the interests of labor . . . An acceptance by railroad labor of the provisions concerning unifications which are now proposed, cannot but be construed as a tacit agreement on the part of railroad employees that mergers, consolidations, co-ordinations, etc., may be freely made, so long as the interests of labor are 'considered'

and some sort of supposed protection given to their interests."

Questioning of Mr. McGrath by Representative Bulwinkle, Democrat of North Carolina, brought out that the B. of R. T. had no "serious" objections to provisions of the committee-of-six bill, other than those relating to consolidations. With reference to the charge of mileage "hogging" by "old heads" the witness told Representative Halleck, Republican of Michigan, that his organization has sought to encourage the imposition of mileage restrictions. He explained, however, that the matter is in the hands of local committees, which are autonomous and sometimes dominated by senior men. Mr. McGrath does not favor Congressional action on the matter, agreeing with Representative Martin that it is something for the brotherhoods to work out themselves.

For Representative Mapes, who has received letters from brotherhood members supporting the committee-of-six bill, Mr. McGrath explained how the B. of R. T. is not affiliated with the Railway Labor Executives Association which endorsed the bill. To Mr. Halleck's inquiry as to what he had to suggest "on the affirmative side," the witness replied that the committee-of-six bill had a "very desirable feature" in the proposed transportation board investigation of the transport industry. He also approved "in principle" the provisions contemplating improved financial reorganization procedures.

Testimony of Luther Walter

Co-trustee Walter of the Chicago Great Western appeared to speak for himself only. He opposed the reorganization of the I. C. C. proposed in the original Lea bill, and thinks it would be a "tremendous mistake" to accept a rewriting of the Interstate Commerce Act by any special interests such as were represented on the committee-of-six. Next Mr. Walter recalled the revenue pooling plan which he offered in the Ex Parte 123 rate case and advocated that the commission be given power to require pooling of revenues from rate increases; also, he favored the regulation of all transport agencies by the I. C. C. With respect to the transport board Mr. Walter thinks such an agency should be selected by the I. C. C.—he would have it "contiguous to" but not "within" the I. C. C. In other words it would be a "sort of public investigator" remaining "independent in its action."

Mr. Walter's complaint against the A. A. R. came in his discussion of joint rail-motor rates. He told how the C. G. W. had published rates for the transportation of trucks on flat cars, despite an A. A. R. resolution condemning joint rates with motor carriers whereby, the A. A. R. contended, a railroad may invade the territory of another road. The C. G. W. trustees have appeared before the A. A. R. board in answer to a summons in this connection, but the decision has not yet been handed down. The A. A. R. resolution on joint rail-motor rates, Mr. Walter declared, is an action "in restraint of trade, it is monopolistic, it strikes down the trucks and prevents the public from getting through rates." And in Mr. Walter's opinion no transport legislation is complete which doesn't "strike down that monopolistic resolution."

In response to questioning from Representative Mapes the witness went on to say that the "rich roads" own the forwarding companies and some of them own trucking companies. He added that when the Baltimore & Ohio "became friendly with Keeshin" it lost the Universal Carloading & Distributing Company's business. Earlier Mr. Walter had said that the B. & O. and Keeshin had agreed upon joint rates which have not been published because of B. & O. President Daniel Willard's disposition to go along with the A. A. R. "The Association," the

witness exclaimed, "is run by the rich roads and for the rich roads and the weaker roads get scant consideration in a competitive way."

On March 22 Judge R. V. Fletcher, vice-president and general counsel of the Association of American Railroads, addressed to Mr. Mapes a letter explaining the A. A. R. resolution on joint rail-motor rates of which Mr. Walter complained. The A. A. R. general counsel called attention to the "declared purpose of the resolution," which "does not advise the railroads to refrain from establishing through routes or joint rates with motor carriers, except in those cases where the effect is to invade the territory of other railroads." Judge Fletcher went on to cite the Interstate Commerce Act provision forbidding a railroad to extend its lines into new territory without a certificate of convenience and necessity, adding that this provision might be circumvented by the establishment of joint rail-motor rates.

Favors Labor-Act Amendments

Continuing Mr. Walter said he wouldn't change present reorganization procedures; and then he came to what he regarded as the "most important thing," although "not the popular thing"—amendments to the Railway Labor Act. Here Mr. Walter recited the history of the recent case wherein certain rules were so interpreted as to require the C. G. W. to award back pay in the amount of \$51,000. The witness then proceeded to submit a set of proposed amendments to the Railway Labor Act which, among other things, would give the railroads a right to appeal in cases involving money awards; provide for a permanent staff of referees to handle adjustment-board cases and require adjustment boards to swear witnesses and make findings. In Mr. Walter's opinion the thing that would assist the railroads most would be relief from paying for work not done.

L. Alfred Jenny, a railroad consulting engineer of New York, and Theodore Brent of New Orleans, La., followed in turn after Mr. Walter. The former asserted that the bills before the committee did not go far enough in requiring railroad consolidations nor in providing for the national defense. Mr. Brent, formerly associated with the Federal Barge Line, appeared on his own behalf to oppose regulation of water carriers, the imposition of tolls for commercial use of the waterways and the discontinuance of the Inland Waterways Corporation.

Program of Short Lines

President Hood of the American Short Line Railroad Association discussed briefly that Association's federal legislative program which had been placed before each committee member in pamphlet form. The Association favors the so-called through routes bill giving the I. C. C. power to prescribe through routes and joint rates without reference to the short-hauling of any carrier; it advocates a revision of the law covering compensation to carriers for the use of their property during the federal control period; repeal of land-grant rates; revision of the rate-making rule and of the provisions of law relating to reparations. Also, repeal of the present consolidation provisions and the substitution of others permitting consolidations "along natural lines" subject to an I. C. C. finding that the proposed mergers are not contrary to the public interest.

In addition to the foregoing the short lines would amend the Railway Labor Act so as to provide for judicial review of adjustment-board decisions, and to limit the time within which cases may be filed with the National Railroad Board of Adjustment. The remaining

three points in the program highlighted by Mr. Hood call for repeal of the undistributed profits tax, the discontinuance of subsidies to and the equalization of the tax burden upon all forms of transportation; and relief for railroads "from financial burdens incident to the elimination of highway-grade crossings."

Meanwhile the Association, Mr. Hood said, takes no position with respect to repeal of the long-and-short-haul clause. It opposes postalization of rates or fares; compulsory consolidations; the creation of a federal transportation authority; the establishment of a special railroad reorganization court; the exclusion of transport agencies from the operations of the Sherman Anti-Trust Act; and any legislation which would "impair the efficiency or independence of the Interstate Commerce Commission." Also, the Association would have Congress repeal legislation which authorizes an official of one government agency to appear before another government agency, such as the Secretary of Agriculture and the National Bituminous Coal Commission appearing before the I. C. C. in rate cases.

Government Traffic Clerks Oppose Repeal of Land-Grant Rates

Benjamin C. Marsh, executive secretary of the Peoples Lobby, Inc., told the committee, among other similar testimony, that Congress should "declare a national emergency and take 'em (the railroads) over at the capitalization of their net earnings during the past year or so, after deducting the value of aid from the Rotten Financing Corporation headed by a modern Jesse James." He was followed by Paul E. Hadlick, secretary and counsel of the National Oil Marketers' Association, who appeared also as counsel for the Federal Transportation Association to make a half-hour argument in opposition to repeal of land-grant rates. He suggested that repeal might set a precedent upon which the railroads could later hang a request for relief from their debts to the R. F. C. One thing which Mr. Hadlick thought Congress could do "to protect the transportation system" is to adopt a new commodities clause which would keep all agencies in the carrying business alone. Representative Holmes, Republican of Massachusetts, brought out the fact that Federal Transportation Association members, to a large extent, are government employees engaged in traffic work; and Representative Halleck followed through to turn up the fact that "probably a third" of the members are employed in checking land-grant rates, and are fearful of losing their jobs. While conceding its existence, Mr. Hadlick did not think such fear was justified.

General Counsel Bell of the Rock Island came before the committee "with great reluctance" to submit views dissenting from those embodied in the committee-of-six bill. He explained that he spoke for the debtor corporation, not for the Rock Island trustees, and that the adverse views expressed by him with respect to the proposed reorganization court and the transportation board were shared by the Missouri Pacific, the St. Louis Southwestern and the St. Louis-San Francisco. It was Mr. Bell's contention, among others, that transfer of reorganization cases to a new court would tend to delay rather than expedite proceedings. He pointed out in this connection that it would take six months or a year for a new court to organize a competent staff, after which much time would be required merely to read the records already made; and these records "are not light reading." Another objection, which Mr. Bell called "fundamental" to the committee-of-six proposal lies in leaving the I. C. C. out of reorganization proceedings

except to the extent that their advice may be sought by the court. Such a change, the witness contended, would be "a departure from the policy established by the Transportation Act of 1920, that the Interstate Commerce Commission, in the public interest, should have supervision over all security issues of carriers by rail."

Continuing Depression Causes Reorganization Delays

Prior to making the foregoing points Mr. Bell had contended that the major cause of reorganization delays has been the "hard times"; thus such delays are not properly attributed to the district courts. He would be most reluctant to have railroad properties reorganized on the basis of current earnings; and he thinks the principal difficulty with section 77 of the bankruptcy act is the cumbersomeness which recent amendments have brought. He explained that in his opinion the section's "essential fault" was the provision requiring the I. C. C. to adjudicate private rights. Such faults, he went on, can be readily cured, adding that the I. C. C. "ought to have jurisdiction in the public interest to pass upon the new capital structure, especially with reference to the amount of fixed charges which the reorganized carrier may assume"; and that section 77 should be amended to eliminate the above-mentioned I. C. C. duties to pass upon private rights as among various classes of creditors.

Coming to his opposition to the transportation-board proposal Mr. Bell felt free to make such a presentation "because the Rock Island representative on the board of directors of the A. A. R. voted against the approval by that board of the committee-of-six plan; the only plan that the Rock Island has approved is the so-called 'Railroad Program,' promulgated in May, 1938, by the A. A. R., after careful preparation and consideration by the member roads of the Association." The A. A. R. board, Mr. Bell continued, "had no power to change that plan without further consideration by the member roads themselves." If the member roads had a chance to vote on the committee-of-six plan, Mr. Bell doubts whether the reorganization provisions would be approved, and he has "grounds for suspicion" that there would be "substantial opposition" to the creation of the transportation board and the failure to propose amendments to the Railway Labor Act.

Rock Island Opposes Transport Board

With respect to the transportation board the Rock Island general counsel argued that the I. C. C. is better qualified to pass upon the matters proposed to be transferred to the new agency. As Mr. Bell sees the proposal it constitutes a change of front after many years of work to place the entire responsibility in one body; and the idea of placing authority over security issues in the transportation board seems to him to embody "disastrous possibilities" for railroad credit. His "earnest hope" is that instead of dividing its responsibilities and creating new boards and new courts "to meddle with the problem" the Congress "will, to paraphrase Andrew Carnegie's recipe for getting rich, put all its eggs in one basket, and then watch that basket," i.e., "put all the responsibility on the Interstate Commerce Commission, and then hold the commission responsible for the results."

Amendments to the law setting up the National Railroad Board of Adjustment would be among the "most important" railroad legislation Congress could enact. Mr. Bell told the committee. In this connection he advocated particularly provisions for review of adjustment-board decisions. It is his understanding that in agreeing to the committee-of-six plan the A. A. R. board

had no intention of abandoning the labor-act features of the Railroad Program; and he mentioned the matter only because he did not wish to see the Rock Island "estopped from presenting the question at some time in the future."

With the foregoing exceptions, Mr. Bell went on, the committee-of-six bill "is admirable"; and the codification and simplification of the Interstate Commerce Act "is a consummation devoutly to be wished." He did, however, offer the additional suggestion that a declaration of policy such as is proposed in section 1 of the committee-of-six bill "is a confession of weakness," since a bill should come forth so clear and plain that its policy shines out from the contents."

Making a presentation similar to Mr. Bell's, Samuel H. Cady, vice-president and general counsel of the Chicago & North Western, also opposed the reorganization and transportation-board provisions of the committee-of-six bill. He stressed the "tremendous amount" of work involved in a railroad reorganization, contending that any criticism of the I. C. C. for reorganization delays was not justified. Mr. Cady told Chairman Lea that he would be opposed to reorganizing railroads on the basis of present earnings; and he is willing to take his chances on an Interstate Commerce Commission determination of what should be done. Aside from the sections to which he was opposed Mr. Cady told the committee that the committee-of-six bill "has qualities which will contribute to a solution of the so-called railroad problem."

Greyhound Takes Over N. E. T. Through Routes

MERGER of the through New York-Boston, Mass., motor bus operations of the New England Transportation Company, wholly-owned subsidiary of the New York, New Haven & Hartford, with New England Greyhound Lines, Inc., has been approved, with the exception of a few provisions, by the Interstate Commerce Commission. It is expected that full approval will be granted within the very near future, whereupon unified operations will take effect.

The terms of the transaction, which the commission has approved, provide that New England Transportation transfer its long distance routes and equipment assigned to those runs to New England Greyhound, for which it receives 10,000 shares of common stock of the latter corporation. In the formation of New England Greyhound, Greyhound Corporation, top holding company of the Greyhound system, received 1,000 shares of New England Greyhound's outstanding stock. Upon the merger with New England Transportation, Greyhound Corporation receives an additional 9,000 shares of New England Greyhound common. Thus, New England Transportation and Greyhound Corporation will each hold one-half the common stock of the newly-created New England Greyhound. Management of the

(Continued on page 532)

What Will the Traffic Bear?—6

The business of this country was developed on the wide distribution of commodities, encouraged by freight rates that moved the traffic. Rail ton-miles increased 225 per cent between 1895 and 1915, but only 30 per cent since then. Traffic lost and rate reductions to retain other traffic, even since 1928, is costing the railroads between \$500,000,000 and \$1,000,000,000 annually. A great part of this was lost to the railroads' competitors and very largely because railroad rates fail to consider their competitors' costs.

Conceding that the conception of "what the traffic will bear" was sound a generation ago—the rate changes made since then have been derived by a conglomeration of percentage formulas projected by slide rule methods, bearing no logical relation to what the traffic will bear today. Business is not conducted on percentage formulas of something that existed a dozen or two dozen years ago. It is not the logic of such percentages which sways the shipper, but his desire for profit. The railroads must recognize this condition, and the fact that their competitors are acting upon it.

The percentage distortion of the original rate theory trebles the opportunity of the freight forwarder and the truck to chisel away railroad traffic—as we showed in last week's issue. The percentage distortion also has increased many freight rates all out of proportion with the increase in commodity prices, and encourages industry to use less transportation of any kind. This condition is continuously encouraging the development of competitive facilities and reducing railroad and total traffic—losses which are falling upon the bond-

holders, stockholders, shippers, and employees.

It is true that the railroads are in need of remedial legislation, but Congress cannot make all the adjustments needed to put the railroads in a prosperous relationship to the traffic of the country. Congress cannot provide a railroad rate structure which will meet the realities of today's competition. This does not mean that a downward revision of all rates is needed. If the railroads will reduce all of their *competitive* rates which are disproportionately in excess of their costs, they will very greatly narrow the operating radius of the freight forwarder and the truck and automatically declare them out of a very large part of such traffic which they are handling today. Such rates will also declare these competitors out of a very large part of return-load traffic which they are now handling on an out-of-pocket basis.

Elimination of this out-of-pocket truck competition will enable the railroads to increase many of their rates which are now below their costs and restore to normal many other rates which have been reduced to meet this competition. Piecemeal revision to meet competition is a failure. What is needed is the wholesale revision of freight rates into a structure which will retrieve from competitors traffic now being handled beyond these competitors' true economic radius. Such a rate structure will restore a large part of lost revenue to carriers which are economically entitled to it, and enable the railroads to effect further economies which will permit them to make a bid for, and to enjoy, a much larger part of the public's dollar than they are now getting.

Reports on Deferred Maintenance

Interstate Commerce Commission makes public data received
in response to questionnaire

WASHINGTON, D. C.

OFFICERS of Class I railroads, as noted briefly in last week's issue, have replied to the Interstate Commerce Commission's deferred-maintenance questionnaire with data showing that there was at the close of 1938 deferred maintenance amounting to \$283,820,066, assuming a traffic as large as that of 1937 to be in prospect. The reports further indicate that \$165,252,369 annually, or a three-year total of \$495,757,106, should be expended during the 1939-1941 period for additions, betterments and extensions "to enable the carriers to handle traffic more cheaply and expeditiously." The "general summary" issued by the commission's Bureau of Statistics along with the compilations of the data and other material explains that the foregoing amounts aggregating \$779,577,172 "are in addition to normal maintenance and do not have reference to any sums which may be needed to meet maturing obligations incurred in the past."

The questionnaire, which was reviewed in the *Railway Age* of December 24, 1938, page 920, also sought information as to how much the above totals would be increased if a traffic 10 per cent greater than that of 1937 were assumed for 1939. The replies were to the effect that this assumption would increase the estimate of deferred maintenance by \$94,851,730, i.e., to a total of \$378,671,796; and it would increase the amount given for additions and betterments and extensions by \$19,990,825 or to \$515,747,931 for the three-year period, 1939-1941.

Some Maintenance May Be Further Deferred

The returns further indicate that the deferred maintenance need not all be made up in the next three years; in this connection the reports show that the 1939-1941 period should see total expenditures of \$221,027,268 or \$73,675,756 a year. Addition of this to the \$165,252,369 estimated annual amount for additions, betterments and extensions gives a total figure of \$238,928,125 a year for the next three years. This total, the statement

high engineering standard." The general summary goes on to point out that if, on the other hand, the deferred maintenance were all made up during the 1939-1941 period, and if traffic should average 10 per cent larger than 1937, the total amount of money that could be used above normal maintenance in the three-year period would be \$894,419,727 or \$298,139,909. It adds that "it is not to be assumed that railways need loans of this amount," because "much of it would come out of revenues if traffic returned to the levels indicated."

At another point the statement issued by the commission observes that "It is evident from the returns that however acute the financial condition of the railways may be from the standpoint of net returns to the investor, the physical condition of the carriers generally is good in matters affecting the safety of train operation and facilities are adequate for handling immediately prospective traffic." Such a set-up, the statement adds, "is not incompatible with the view that a sharp rise in traffic and revenues would result in greatly increased maintenance expenditures partly because of the direct effect of the increase in traffic and partly because the standard of what is necessary or desirable expenditure would be raised."

Material Included in Report

The commission's statement as a whole occupies 93 mimeographed sheets with more than half of them given over to a tabulation of selected statistics relating to maintenance of way, structures, and equipment for the 1929-1937 period for roads with annual operating revenues above \$25,000,000. Also included are the tables, reproduced herewith, showing the reported deferred maintenance and additions and betterments by roads and systems and the analysis of deferred maintenance by accounts. Other material covers comments on deferred maintenance received with some of the replies, although "in most cases the questions were answered without

Analysis of Deferred Maintenance by Accounts

Item	Expenses for material or equipment at prices current at the time of this reply	Charges on respondent's payroll at wage rates current at the time of this reply	Other expenditures	Total	Amount of preceding total which would be charged to investment
(a) Rail renewals.....	\$43,313,146	\$6,144,630	\$637,094	\$50,094,870	\$9,597,745
(b) Tie renewals.....	16,280,095	4,734,274	94,516	21,108,885	43,750
(c) Other roadway and track maintenance, including fences.....	13,393,976	23,475,158	1,326,683	38,195,817	5,228,700
(d) Bridges and elevated structures.....	8,196,381	7,224,742	2,351,796	17,772,919	6,481,737
(e) Stations and office buildings, and station facilities.....	2,146,152	2,553,145	1,212,184	5,911,481	516,497
(f) Shop buildings, engine-houses, and appurtenances.....	2,877,367	3,115,153	80,955	6,073,475	1,200,941
(g) Shop machinery and tools.....	2,904,686	603,424	65,573	3,573,683	1,995,907
(h) All other maintenance of way and structures.....	6,272,333	6,928,856	1,329,781	14,530,970	3,105,345
(i) Locomotives and cars:					
(1) Repairs of existing equipment.....	48,069,887	31,484,807	4,618,225	84,172,919	12,717,653
(2) Additional equipment.....	31,681,708	927,700	4,666,400	37,275,808	37,061,808
(j) All other repairs or purchase of equipment.....	2,959,264	919,975	1,230,000	5,109,239	1,795,047
Total.....	\$178,094,995	\$88,111,864	\$17,613,207	\$283,820,066	\$79,745,130

says, "must be taken as conservative. It does not represent all the work railway managers would like to do 'if they had the money' to bring their properties to a

special comment;" abstracts of evidence on deferred maintenance offered by railway witnesses in rate cases; and brief discussions of the effect of capital expendi-

Deferred Maintenance and Additions and Betterments by Railways or Systems

Railway or system	Total deferred maintenance Question 1	Expenditures reported for additions, betterments, and extensions 3 year total Question 4	Total deferred maintenance and additions		Railway or system	Total deferred maintenance Question #1	Expenditures reported for additions, betterments, and extensions 3 year total Question #4	Total deferred maintenance and additions	
			Amount	Percent of 1937 operating revenues				Amount	Percent of 1937 operating revenues
Akron, Canton & Youngstown*	\$186,327	\$602,037	\$788,364	37.150	Norfolk Southern*	\$26,000	\$945,276	\$971,276	19.939
Alton.....	3,232,372	.....	3,232,372	19.141	Northern Pacific.....	.....	18,000,000	18,000,000	27.756
Ann Arbor*	1,250,000	120,000	1,370,000	34.945	Pennsylvania.....	75,091,300	26,850,000	101,941,300	22.359
Atchison, Topeka & Santa Fe.....	3,000,000	.....	3,000,000	1.758	Pennsylvania-Reading Seashore Lines.....	3,009,340	2,699,100	5,708,440	90.541
Atlanta & West Point§.....	9,942	.....	9,942	.286	Pere Marquette.....	1,300,000	14,742,000	16,042,000	49.775
Atlantic Coast Line.....	3,747,045	4,631,862	8,378,907	17.466	Pittsburg & Shawmut.....	462,832	272,208	735,040	112.226
Baltimore & Ohio.....	25,837,592	.....	25,837,592	15.249	Pittsburgh & West Virginia	2,590,876	502,000	3,092,876	75.571
Bessemer & Lake Erie.....	.....	8,056,950	8,056,950	45.817	Pittsburg, Shawmut & Northern*	545,460	105,999	651,459	63.729
Boston & Maine.....	1,667,000	8,400,000	10,067,000	21.709	Reading.....	6,336,373	2,062,965	8,399,338	14.296
Canadian National Lines in New England.....	.....	315,000	315,000	21.889	Richmond, Fredericksburg & Potomac.....	838,500	1,065,000	1,903,500	22.125
Central of Georgia*	4,543,100	1,174,595	5,717,695	34.549	Rutland*.....	684,400	.....	684,400	19.646
Central of New Jersey.....	4,874,814	300,000	5,174,814	15.885	St. Louis Southwestern*...	4,300,566	6,404,888	10,705,454	50.698
Central Vermont.....	195,000	225,000	420,000	6.727	Southern#.....	3,532,000	3,300,000	6,832,000	5.289
Charleston & Western Carolina.....	183,511	60,000	243,511	9.659	Southern Pacific Co.—Pacific Lines*.....	.....	10,521,900	10,521,900	\$4.837
Chesapeake & Ohio.....	.....	4,565,000	4,565,000	3.585	Spokane, Portland & Seattle and Affiliated Companies	.....	900,000	900,000	10.101
Chicago & Eastern Illinois*	424,000	1,650,000	2,074,000	12.660	Tennessee Central.....	1,249,000	1,159,551	2,408,551	95.877
Chicago & North Western*	.....	26,952,800	26,952,800	30.013	Texas & Pacific.....	.....	1,888,100	1,888,100	6.221
Chicago, Burlington & Quincy.....	518,110	30,000,000	30,518,110	30.472	Texas Mexican.....	695,723	.....	695,723	47.432
Chicago Great Western*	2,512,984	.....	2,512,984	13.431	Toledo, Peoria & Western..	.....	4,000,000	4,000,000	167.138
Chicago, Indianapolis & Louisville*	837,157	5,247,984	6,085,141	60.506	Wabash*.....	10,304,259	3,705,000	14,009,259	30.367
Chicago, Rock Island & Pacific*	5,717,000	46,950,000	52,667,000	64.509	Western Maryland.....	8,142,325	1,500,000	9,642,325	54.704
Chicago, St. Paul, Minneapolis & Omaha.....	.....	15,261,858	15,261,858	83.958	Western Pacific*.....	1,046,502	8,462,308	9,508,810	58.297
Clinchfield.....	88,250	246,000	334,250	4.858	Wheeling & Lake Erie.....	3,234,376	1,290,000	4,524,376	28.329
Columbus & Greenville....	1,820,103	.....	1,820,103	139.889	Total.....	\$283,820,066	\$495,757,106	\$779,577,172	21.284
Delaware & Hudson.....	3,027,792	15,593,698	18,621,490	73.837					
Delaware, Lackawanna & Western.....	2,091,800	5,250,000	7,341,800	14.632					
Denver & Rio Grande Western*	5,115,489	22,293,200	27,408,689	102.340					
Denver & Salt Lake.....	2,466,530	1,817,322	4,283,852	152.654					
Detroit & Mackinac.....	488,944	.....	488,944	55.220					
Detroit & Toledo Shore Line	247,529	102,000	349,529	9.162					
Detroit, Toledo & Ironton.	1,125,550	586,400	1,711,950	22.804					
Duluth, Missabe & Iron Range.....	.....	4,320,000	4,320,000	16.146					
Duluth, South Shore & Atlantic*	1,818,037	262,883	2,080,920	73.110					
Duluth, Winnipeg & Pacific	.....	51,000	51,000	3.587					
Elgin, Joliet & Eastern....	.....	8,900,000	8,900,000	41.705					
Erie (including Chicago & Erie)*.....	5,102,801	13,690,419	18,793,220	22.393					
Florida East Coast*	4,829,750	2,212,500	7,042,250	75.697					
Georgia, Lessee Organization.....	99,792	78,087	177,879	4.840					
Georgia & Florida*	486,294	.....	486,294	37.662					
Grand Trunk Western.....	.....	3,359,000	3,359,000	13.819					
Great Northern.....	.....	5,700,000	5,700,000	6.004					
Gulf Coast Lines (including subsidiaries)*†.....	.....	3,026,000	3,026,000	20.973					
Gulf Mobile & Northern..	937,125	.....	937,125	12.450					
Illinois Central ^o	5,050,000	17,680,000	22,730,000	19.670					
International-Great Northern*	.....	2,902,000	2,902,000	22.200					
Kansas City Southern.....	258,000	1,560,000	1,818,000	12.826					
Lehigh Valley.....	1,634,255	600,000	2,234,255	4.595					
Long Island.....	2,908,000	6,226,600	9,134,600	37.153					
Louisville & Nashville.....	2,103,800	48,979,000	51,082,800	56.636					
Maine Central.....	2,138,500	221,274	2,359,774	18.879					
Minneapolis & St. Louis*	2,943,395	750,000	3,693,395	42.648					
Minneapolis, St. Paul & Sault Ste Marie*.....	10,688,755	2,973,820	13,662,575	49.287					
Mississippi Central.....	1,109,018	.....	1,109,018	118.864					
Missouri & Arkansas.....	454,800	75,000	529,800	46.659					
Missouri-Illinois*.....	.....	1,051,000	1,051,000	71.197					
Missouri Pacific (including subsidiaries)*.....	.....	20,625,000	20,625,000	22.317					
Mobile & Ohio*.....	3,238,140	.....	3,238,140	26.751					
Monongahela.....	736,403	116,000	852,403	19.076					
Nashville, Chattanooga & St. Louis.....	1,543,284	6,990,000	8,533,284	59.676					
New York Central*.....	32,934,844	10,500,000	43,434,844	11.157					
New York, Chicago & St. Louis.....	105,000	10,466,622	10,571,622	25.405					
New York, New Haven & Hartford*.....	2,646,000	.....	2,646,000	3.261					
New York, Ontario & Western*.....	1,456,300	655,000	2,111,300	32.582					
Norfolk & Western.....	.....	11,007,900	11,007,900	11.604					

*Denotes road in receivership or trusteeship.

†Includes Western Ry. of Alabama.

°Includes Chicago, Rock Island & Gulf Ry. Co.

°Includes Beaumont, Sour Lake & Western Ry. Co.; New Orleans, Texas & Mexico Ry. Co.; San Antonio, Uvalde & Gulf R. R. Co.; St. Louis, Brownsville & Mexico Ry. Co.

°Includes Illinois Central R. R. Co.; Gulf & Ship Island R. R. Co.; and Yazoo & Mississippi Valley R. R. Co.

*Includes New York Central R. R. Co. and leased lines; Pittsburgh & Lake Erie R. R. Co.

tures in reducing transportation costs and the need for more exact measures of maintenance.

As will be seen from the tabulation of deferred maintenance and additions and betterments by roads the last column relates the totals reported to the 1937 operating revenues. These percentages vary from the Atlanta & West Point's 0.286 per cent to the Toledo, Peoria & Western's 167.138 per cent; all of the former was reported as deferred maintenance, and all of the latter as needed expenditures for additions and betterments. The Pennsylvania's \$101,941,300 tops the list; it is equivalent to 22.359 per cent of that road's 1937 gross.

The total number of replies received in time for tabulation was 115, many of them being for systems covering a group of individual railways. The revenues of those included in the report amount to 99.75 per cent of the total revenues of Class I railways. In 48 replies the answer indicated that there was no deferred maintenance to be tabulated in answer to Question No. 1. Of the 67 replies represented in the deferred maintenance total, 44 were for railways or systems not in the hands of the courts, and 23 for properties in receivership or trusteeship. The railways not in the hands of the courts reported deferred maintenance amounting to \$213,117,350, which was 9.701 percent of their operating revenues for 1937. The railways in receivership or trusteeship reported deferred maintenance of \$70,702,716 or 14.068 percent of their operating revenues.

The statement suggests in the latter connection that "if it be thought that the railways reporting no deferred maintenance understood the term in too narrow a sense, it may be of interest to compute what the total would be for all Class I railways, if the percentages of 9.701 percent and 14.068 percent given above are applied to the total revenues for 1937 of all Class I railways, respectively for those not in hands of the courts and those in receivership or trusteeship. This would give \$315,000,000 for the former and \$129,000,000 for the latter, or a total of \$444,000,000."

\$122,911,784 Net Deficit in 1938

WASHINGTON, D. C.

THE Interstate Commerce Commission on March 16 made public its compilation of selected income and balance sheet items for December and the 12 months of 1938, showing last year's net deficit of the Class I railroads to have been \$122,911,784, as previously

reported by the Association of American Railroads and noted in the *Railway Age* of March 4. Seventy-seven Class I roads reported net deficits for 1938 while 54 had net incomes, as compared respectively with 63 net deficits and 68 net incomes in 1937.

The 1938 net railway operating income was \$372,844,650, as compared with 1937's \$590,203,896; fixed charges were down from \$628,413,311 to \$613,829,337.

The commission's summary and the principal items for the individual roads are given in the accompanying tables.

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 136 reports (Form IBS) representing 141 steam railways
(Switching and Terminal Companies Not Included)

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of December		Income Items	For the twelve months of		Selected Asset Items	Balance at end of December	
1938	1937		1938	1937		1938	1937
\$49,371,522	\$25,994,857	1. Net railway operating income....	\$372,844,650	\$590,203,896	13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707).....	\$648,289,163	\$665,074,919
28,580,092	40,534,276	2. Other income....	155,266,900	174,597,572	14. Cash.....	449,947,664	352,917,730
77,951,614	66,529,133	3. Total income..	528,111,550	764,801,468	15. Demand loans and deposits.....	11,251,587	5,245,991
2,865,839	6,492,877	4. Miscellaneous deductions from income.....	24,657,765	25,001,641	16. Time drafts and deposits.....	19,392,610	34,321,881
75,085,775	60,036,256	5. Income available for fixed charges..	503,453,785	739,799,827	17. Special deposits.....	65,061,089	92,726,174
12,042,070	11,216,628	6. Fixed charges:			18. Loans and bills receivable.....	1,151,411	4,068,199
		6-01. Rent for leased roads and equipment.....	136,071,072	147,704,978	19. Traffic and car-service balances receivable	61,293,811	57,649,963
39,522,209	41,321,436	6-02. Interest deductions.....	\$475,520,378	\$478,006,445	20. Net balance receivable from agents and conductors.....	41,254,298	38,604,494
*96,404	215,827	6-03. Other deductions.....	2,237,887	2,701,888	21. Miscellaneous accounts receivable.....	128,110,629	143,180,396
51,467,875	52,753,891	6-04. Total fixed charges.....	613,829,337	628,413,311	22. Materials and supplies.....	317,561,698	385,056,582
23,617,900	7,282,365	7. Income after fixed charges.....	*110,375,552	111,386,516	23. Interest and dividends receivable.....	20,366,631	22,411,429
1,392,523	1,539,940	8. Contingent charges.....	12,536,232	12,715,482	24. Rents receivable.....	1,301,049	1,965,843
22,225,377	5,742,425	9. Net Income...	*122,911,784	98,671,034	25. Other current assets.....	3,204,802	4,263,711
16,565,469	16,841,607	10. Depreciation (Way and structures and Equipment).....	201,825,145	197,033,672	26. Total current assets (items 14 to 25)....	\$1,119,897,279	\$1,142,412,393
2,722,140	*631,909	11. Federal income taxes.....	18,924,494	31,973,461	Selected Liability Items		
7,142,753	18,009,471	12. Dividend appropriations:			27. Funded debt maturing within 6 months†...	\$184,766,535	\$91,226,424
937,697	1,315,926	12-01. On common stock.....	69,088,936	140,288,593	28. Loans and bills payable†.....	243,172,824	216,222,949
		12-02. On preferred stock.....	13,643,635	27,488,441	29. Traffic and car-service balances payable...	78,439,849	75,859,642

*Represents accruals, including the amount in default.

†Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

‡Includes obligations which mature not more than 2 years after date of issue.
*Deficit or other reverse items.

Selected Income Items by Regions and Districts Class I Steam Railways, Calendar Years 1938 and 1937

Region and Railway	Net Railway Operating Income		Total Income		Total Deductions		Net Income	
	1938	1937	1938	1937	1938	1937	1938	1937
Eastern District:								
New England Region.....	\$3,019,623	\$14,979,824	\$9,531,620	\$21,885,397	\$28,969,021	\$29,778,818	*\$19,437,401	*\$7,893,421
Great Lakes Region.....	40,668,975	93,807,492	62,173,222	127,526,487	114,240,159	118,250,966	*52,066,937	9,275,521
Central Eastern Region.....	92,217,861	138,406,635	140,580,818	190,717,817	148,290,121	150,740,969	*7,709,303	39,976,848
Total, Eastern District.....	135,906,459	247,193,951	212,285,660	340,129,701	291,499,301	298,770,753	*79,213,641	41,358,948
Southern District:								
Poconos Region.....	59,219,739	85,868,712	63,162,034	90,965,815	15,852,493	16,311,148	47,309,541	74,654,667
Southern Region.....	60,204,024	74,160,010	72,481,053	90,445,029	82,215,500	83,843,875	*9,734,447	6,601,154
Total, Southern District.....	119,423,763	160,028,722	135,643,087	181,410,844	98,067,993	100,155,023	37,575,094	81,255,821
Western District:								
Northwestern Region.....	28,693,820	63,309,605	40,840,226	75,064,982	91,946,956	95,014,369	*51,106,730	*19,949,387
Central Western Region.....	64,701,740	79,192,174	111,865,496	123,098,736	105,690,959	108,142,744	6,174,537	14,955,992
Southwestern Region.....	24,118,868	40,479,444	27,477,081	45,097,205	63,818,125	64,047,545	*36,341,044	*18,950,340
Total, Western District.....	117,514,428	182,981,223	180,182,803	243,260,923	261,456,040	267,204,658	*81,273,237	*23,943,735
United States.....	372,844,650	590,203,896	528,111,550	764,801,468	651,023,334	666,130,434	*122,911,784	98,671,034
Akron, Canton & Youngstown Ry.†	81,567	306,525	172,992	408,077	252,882	318,611	*79,890	89,466
Atchison, Topeka & Santa Fe Ry.®	18,026,118	16,991,973	21,876,365	21,113,638	13,648,321	13,537,141	8,228,044	7,576,497
Atlantic Coast Line System:								
Atlanta & West Point R. R.....	*105,820	*78,583	*78,754	*54,422	5,532	4,535	*84,286	*58,957
Atlanta, Birmingham & Coast R. R.	*192,268	*112,575	*156,260	*69,822	17,539	17,813	*173,799	*87,635
Atlantic Coast Line R. R.....	2,390,751	4,938,774	5,640,327	9,785,736	7,498,777	7,331,595	*1,858,450	2,454,141
Charleston & Western Carolina Ry.	291,986	496,719	316,135	518,277	302,424	203,856	13,711	215,421
Clinchfield R. R.....	2,237,387	3,207,138	2,668,759	3,227,796	2,668,759	3,227,796	.....	.....
Georgia R. R.—Lessee Organization.....	523,737	522,003	561,509	564,058	667,965	692,314	*106,456	*128,256
Louisville & Nashville R. R.....	11,622,971	15,551,121	12,500,358	16,772,777	9,794,342	9,672,431	2,706,016	7,100,346
Nashville, Chattanooga & St. Louis Ry.....	1,481,936	840,290	1,696,705	1,083,746	1,554,410	1,555,369	142,295	*471,623
Western Ry. of Alabama.....	86,791	77,573	130,909	126,844	76,161	75,693	54,748	51,151

†Report of trustee or trustees.

®Includes Atchison, Topeka & Santa Fe, Gulf, Colorado & Santa Fe, and Panhandle & Santa Fe.

*Deficit or other reverse items.

Selected Income Items by Regions and Districts, Class I Steam Railways, 1938 and 1937—Continued

Region and Railway	Net Railway Operating Income		Total Income		Total Deductions		Net Income	
	1938	1937	1938	1937	1938	1937	1938	1937
Baltimore & Ohio System:								
Alton R. R.	312,863	712,057	392,408	827,254	1,839,975	1,837,768	*1,447,567	*1,010,514
Baltimore & Ohio R. R.	14,851,794	24,908,625	21,346,623	33,426,469	34,471,153	34,147,164	*13,124,530	*720,695
Staten Island Rapid Transit Ry.	*271,947	*400,881	573,060	579,621	573,060	579,621		
Bangor & Aroostook R. R.	974,778	1,511,650	1,018,664	1,581,678	779,695	736,454	238,969	845,224
Bessemer & Lake Erie R. R.	2,270,644	7,680,668	2,394,952	7,862,920	1,579,762	1,501,332	815,190	6,361,588
Boston & Maine R. R.	1,254,166	6,548,869	2,431,420	7,749,074	7,531,046	7,546,854	*5,099,626	202,220
Burlington-Rock Island R. R.	*44,746	*104,693	*41,929	*99,712	796,002	767,164	*837,931	*866,876
Burlington Route:								
Chicago, Burlington & Quincy R. R.	12,407,392	13,326,496	13,503,209	14,681,358	9,861,446	9,774,104	3,641,763	4,907,254
Colorado & Southern Ry.	102,510	675,992	1,573,623	2,305,001	2,026,989	2,053,449	*453,366	251,552
Fort Worth & Denver City Ry.	907,108	1,880,879	947,817	1,925,913	1,068,326	1,177,752	*120,509	748,161
Cambria & Indiana R. R.	865,821	919,598	879,545	938,174	100,788	94,131	778,757	844,043
Canadian National System:								
Canadian National Lines in New England	*629,455	*562,690	629,915	654,070	623,512	638,716	6,403	15,354
Central Vermont Ry.	*545,204	119,672	*507,743	161,820	1,255,540	1,303,728	*1,763,283	*1,141,908
Duluth, Winnipeg & Pacific Ry.	*294,672	3,227	486,928	483,256	476,014	475,621	10,914	7,635
Grand Trunk Western R. R.	*788,981	2,423,752	*268,130	3,386,568	4,633,323	4,250,420	*4,901,453	*863,852
Canadian Pacific System:								
Canadian Pacific Lines in Vermont	*715,273	*436,441	264,000	264,006	264,000	264,006		
Duluth, South Shore & Atlantic Ry.	*126,865	463,510	*109,995	485,415	967,422	948,357	*1,077,417	*462,942
International Ry. Co. of Maine	17,731	49,411	117,680	117,680	117,680	117,680		
Minneapolis, St. Paul & Sault Ste. Marie Ry.	*224,884	2,387,239	*44,169	2,577,769	6,594,141	8,312,866	*6,638,310	*5,735,097
Spokane International Ry.	56,461	109,472	68,812	120,213	275,033	274,807	*206,221	*154,594
Chesapeake & Ohio System:								
Chesapeake & Ohio Ry.	28,983,311	42,614,450	29,952,550	44,085,296	9,269,717	9,522,850	20,682,833	34,562,446
Erie R. R. (inc. Chicago & Erie R. R.) ¹	3,214,328	13,614,008	4,223,405	14,800,054	15,001,199	15,233,347	*10,777,794	*433,293
New Jersey & New York R. R.	*276,863	*346,304	*272,412	*342,196	51,377	52,327	*323,789	*304,523
New York, Susquehanna & Western R. R.	48,827	368,297	113,572	428,698	659,343	862,981	*545,771	*434,93
New York, Chicago & St. Louis R. R.	5,058,132	7,660,564	6,205,657	10,096,584	7,265,161	7,441,023	*1,059,504	2,655,561
Chicago & Eastern Illinois Ry.	667,265	1,336,582	915,069	1,588,474	2,302,719	2,304,298	*1,387,650	*715,824
Chicago & Illinois Midland Ry.	591,158	870,043	597,314	886,560	372,880	356,652	224,434	529,908
Chicago & North Western System:								
Chicago & North Western Ry.	*125,511	37,401	1,472,059	1,938,165	16,748,042	16,749,263	*15,275,983	*14,811,098
Chicago, St. Paul, Minneapolis & Omaha Ry.	*244,587	*174,546	*176,776	*107,827	2,497,592	2,504,267	*2,674,368	*2,612,094
Chicago Great Western R. R.	593,476	862,928	723,636	1,010,334	1,867,909	1,912,697	*1,144,273	*902,363
Chicago, Indianapolis & Louisville Ry.	*414,285	*119,087	*327,053	*23,219	1,523,967	1,526,462	*1,851,020	*1,549,681
Chicago, Milwaukee, St. Paul & Pacific R. R.	5,274,539	8,790,661	6,203,350	9,925,302	24,199,620	24,146,573	*17,996,270	*14,221,271
Columbus & Greenville Ry.	125,786	*11,811	144,767	7,116	15,105	17,012	129,662	*9,896
Delaware & Hudson R. R.	3,532,502	2,815,198	3,752,899	3,020,062	3,909,104	4,018,227	*156,205	*998,165
Delaware, Lackawanna & Western R. R.	2,509,621	5,628,901	3,797,587	6,913,226	7,752,541	7,849,998	*3,954,954	*936,772
Denver & Rio Grande Western R. R.	171,129	*283,337	479,295	63,259	6,139,402	6,009,203	*5,660,107	*5,945,944
Denver & Salt Lake Ry.	877,224	930,161	887,275	944,909	886,429	936,218	846	8,691
Detroit & Mackinac Ry.	156,722	91,441	160,055	94,545	120,301	108,795	39,754	*14,250
Detroit & Toledo Shore Line R. R.	358,358	1,076,002	377,516	1,093,395	120,800	122,432	256,716	970,963
Detroit, Toledo & Ironton R. R.	1,176,310	2,348,112	1,213,523	2,385,482	833,831	812,447	379,692	1,573,035
Duluth, Missabe & Iron Range Ry.	1,553,381	12,721,781	1,863,529	12,930,307	1,406,266	1,474,565	457,263	11,455,742
Elgin, Joliet & Eastern Ry.	1,160,868	3,723,271	1,238,253	3,891,841	966,121	2,392,920	272,132	1,498,921
Florida East Coast Ry.	1,029,492	741,578	1,117,380	836,103	3,082,906	3,017,296	*1,965,526	*2,181,193
Frisco Lines:								
St. Louis-San Francisco Ry.	1,192,550	4,967,011	1,360,620	5,138,564	12,835,392	12,895,220	*11,474,772	*7,756,656
St. Louis, San Francisco & Texas Ry.	*92,191	*201,072	*76,354	*186,923	137,511	137,060	*213,865	*323,983
Georgia & Florida R. R.	*37,028	34,875	*25,670	45,189	691,427	673,268	*717,097	*628,079
Great Northern Ry.	14,479,276	23,769,408	18,053,990	27,009,790	15,341,430	16,919,870	2,712,560	10,089,920
Green Bay & Western R. R.	134,576	263,462	173,018	308,426	479	135,315	172,539	173,111
Gulf, Mobile & Northern R. R.	830,410	1,151,500	991,022	1,312,137	875,434	967,019	115,588	345,118
Illinois Central System:								
Central of Georgia Ry.	253,987	854,911	628,485	1,254,461	3,620,352	3,627,271	*2,991,867	*2,372,810
Gulf & Ship Island R. R.	*305,485	*67,095	*277,188	*36,494	70,982	74,187	*348,170	*110,681
Illinois Central R. R.	14,712,384	14,635,913	17,825,177	19,133,416	16,711,081	17,173,100	1,114,096	1,960,316
Yazoo & Mississippi Valley R. R.	2,103,975	3,132,602	2,203,854	3,232,308	2,203,854	3,232,308		
Illinois Terminal R. R.	830,691	1,398,457	859,002	1,426,149	770,117	1,382,070	88,885	44,079
Kansas City Southern Ry.	2,866,815	3,371,629	3,121,700	3,663,689	2,774,426	2,821,561	347,274	842,128
Kansas, Oklahoma & Gulf Ry.	692,043	832,040	758,168	901,683	269,897	263,891	488,271	637,792
Lake Superior & Ishpeming R. R.	*79,608	1,383,488	*76,660	1,387,040	467	374	*77,127	1,386,666
Lehigh & Hudson River Ry.	128,218	204,924	156,470	244,255	693	757	155,777	243,498
Lehigh & New England R. R.	705,981	754,237	730,174	786,063	392,376	403,119	337,798	382,944
Lehigh Valley R. R.	3,906,449	6,245,454	4,785,627	7,304,768	8,066,240	8,203,321	*3,280,613	*898,553
Louisiana & Arkansas Ry.	1,358,413	1,216,265	1,435,759	1,302,993	913,923	893,168	521,836	409,825
Louisiana, Arkansas & Texas Ry.	*28,547	59,599	*22,752	66,423	47,771	47,067	*70,523	19,356
Maine Central R. R.	1,367,268	2,085,103	1,790,714	2,544,190	2,093,337	2,070,643	*302,623	473,547
Midland Valley R. R.	408,771	494,576	483,196	587,449	463,281	463,338	19,915	124,111
Minneapolis & St. Louis R. R.	679,104	503,215	749,783	588,270	2,993,359	3,006,339	*2,243,576	*2,418,069
Mississippi Central R. R.	37,965	31,987	40,764	36,109	130,954	131,094	*90,190	*94,985
Missouri & Arkansas Ry.	6,972	12,857	8,906	22,177	2,506	1,042	6,400	21,135
Missouri-Kansas-Texas Lines ²	865,737	2,962,698	1,190,067	3,344,556	5,039,233	4,970,033	*3,849,166	*1,625,477
Missouri Pacific System:								
Beaumont, Sour Lake & Western Ry.	451,754	316,225	456,751	318,811	174,700	175,030	282,051	143,781
International - Great Northern R. R.	*602,061	197,568	*558,636	254,252	2,822,127	2,833,659	*3,380,763	*2,579,407
Missouri-Illinois R. R.	100,617	195,366	105,182	197,734	137,567	138,722	*32,385	59,012
Missouri Pacific R. R.	5,479,497	11,003,379	6,474,033	12,473,629	21,241,993	21,252,523	*14,767,960	*8,778,894
New Orleans, Texas & Mexico Ry.	657,566	868,587	743,285	1,299,425	2,794,189	2,795,647	*2,050,904	*1,496,222
St. Louis, Brownsville & Mexico Ry.	1,251,301	2,028,041	1,341,606	2,091,444	805,373	818,957	536,233	1,272,487
San Antonio, Uvalde & Gulf R. R.	*502,943	*317,867	*491,171	*307,204	244,432	241,654	*735,603	*548,858
Texas & Pacific Ry.	4,771,419	5,512,247	5,495,482	6,513,396	4,073,626	4,072,769	1,421,856	2,440,627

†Report of receiver or receivers.

‡Report of trustee or trustees.

1Under trusteeship, Erie R. R. only.

2Includes Missouri-Kansas-Texas R. R. and Missouri-Kansas-Texas R. R. of Texas.

*Deficit or other reverse items.

Selected Income Items by Regions and Districts, Class I Steam Railways, 1938 and 1937—Continued

Region and Railway	Net Railway Operating Income		Total Income		Total Deductions		Net Income	
	1938	1937	1938	1937	1938	1937	1938	1937
Monongahela Ry.....	935,507	1,197,132	949,363	1,214,639	645,698	646,466	303,665	568,173
Montour R. R.....	660,273	1,036,774	665,243	1,045,467	90,606	97,544	574,637	947,923
Nevada Northern Ry.....	161,160	256,655	175,058	270,704	1,371	1,912	173,687	268,792
New Haven System:								
New York, New Haven & Hart-								
ford R. R.†.....	517,047	4,591,390	2,942,830	7,650,020	14,566,023	15,363,471	*11,623,193	*7,713,451
New York, Ontario & Western Ry.†	*599,496	*174,817	*576,767	*126,230	1,417,547	1,549,056	*1,994,314	*1,675,286
New York Central Lines:								
New York Central R. R.....	15,582,476	36,028,267	30,756,142	60,345,663	50,910,499	53,993,051	*20,154,357	6,352,612
Pittsburgh & Lake Erie R. R.....	1,803,166	4,137,830	2,054,682	4,623,729	356,161	584,199	1,698,521	4,039,530
New York Connecting R. R.....	1,309,242	1,142,948	1,324,536	1,158,411	1,326,787	1,324,210	*2,251	*165,799
Norfolk & Western Ry.....	21,722,288	32,715,282	24,395,322	36,087,333	3,856,480	4,034,119	20,538,842	32,053,214
Norfolk Southern R. R.†.....	222,259	378,782	399,999	563,026	889,407	886,567	*489,408	*323,541
Northern Pacific Ry.....	6,297,356	10,651,002	10,560,456	14,770,060	14,882,872	14,652,320	*4,322,416	117,740
Oklahoma City-Ada-Atoka Ry.....	18,686	86,693	21,314	89,956	19,627	40,675	1,687	49,281
Pennsylvania System:								
Long Island R. R.....	*217,965	*176,253	208,277	428,426	2,417,953	2,544,238	*2,209,676	*2,115,812
Pennsylvania R. R.....	57,332,898	73,000,926	93,559,078	110,560,154	82,512,978	83,281,516	11,046,100	27,278,638
Pennsylvania - Reading Seashore								
Lines.....	*2,133,217	*1,733,363	*1,956,391	*1,571,371	1,074,067	1,079,979	*3,030,458	*2,651,350
Pere Marquette Ry.....	853,602	4,461,045	1,167,599	5,069,679	3,427,402	3,399,821	*2,259,803	1,669,858
Pittsburgh & Shawmut R. R.....	*74,257	21,775	*49,709	58,027	24,683	114,457	*74,392	*56,430
Pittsburgh & West Virginia Ry.....	627,867	1,110,999	725,525	1,547,010	925,738	908,469	*200,213	638,541
Pittsburgh, Shawmut & Northern								
R. R.†.....	45,096	*9,506	51,095	*1,360	128,201	128,425	*77,106	*129,785
Reading System:								
Central R. R. of New Jersey.....	259,144	2,147,765	1,178,294	3,118,419	5,443,119	5,200,805	*4,264,825	*2,082,386
Reading Co.....	10,104,324	13,856,835	12,379,101	16,189,020	9,083,792	9,349,675	3,295,309	6,839,345
Richmond, Fredericksburg & Poto-								
mac R. R.....	635,005	1,102,567	855,111	1,308,294	339,801	328,021	515,310	980,273
Rock Island System:								
Chicago, Rock Island & Gulf Ry.†	197,702	531,520	333,690	662,103	1,419,252	1,375,225	*1,085,562	*713,122
Chicago, Rock Island & Pacific								
Ry.†.....	2,315,140	3,927,186	2,963,246	4,549,939	14,480,015	14,604,405	*11,516,769	*10,054,466
Rutland R. R.†.....	*530,677	*70,088	*480,396	4,448	411,401	413,056	*891,797	*408,608
Seaboard Air Line Ry.†.....	1,449,486	4,348,988	1,764,724	4,729,343	9,354,885	9,359,622	*7,590,161	*4,630,279
Southern System:								
Alabama Great Southern R. R.....	1,414,642	1,252,744	2,062,635	2,316,068	566,456	495,403	1,496,179	1,820,665
Cincinnati, New Orleans & Texas								
Pacific Ry.....	3,996,690	4,874,611	4,086,028	4,988,768	1,872,237	1,726,179	2,213,791	3,262,589
Georgia Southern & Florida Ry.....	29,789	241,741	37,364	251,939	304,016	305,320	*266,652	*53,381
Mobile & Ohio R. R.†.....	964,186	930,460	1,024,104	987,360	1,582,450	1,634,799	*558,346	*647,439
New Orleans & Northeastern R. R.								
R. R.....	415,098	596,414	441,986	623,177	395,942	393,396	46,044	229,781
Northern Alabama Ry.....	36,096	142,653	36,441	143,893	109,529	109,445	*73,088	34,448
Southern Ry.....	14,343,565	15,112,246	16,439,955	17,706,906	16,937,727	16,900,984	*497,772	805,922
Southern Pacific System:								
Northwestern Pacific R. R.....	*921,446	*185,017	*903,621	*165,670	1,491,834	1,498,428	*2,395,455	*1,664,098
St. Louis Southwestern Lines†.....	2,020,021	2,227,179	2,102,892	2,321,100	3,029,769	3,265,263	*926,877	*944,163
Southern Pacific Co.....	10,959,982	17,876,124	32,694,353	39,368,546	30,268,914	33,160,975	2,425,439	6,207,571
Texas & New Orleans R. R.....	3,337,021	4,740,156	3,650,649	5,081,875	4,835,593	4,873,444	*1,184,944	208,431
Spokane, Portland & Seattle Ry.....	721,778	1,537,357	892,265	1,638,462	3,696,310	3,501,135	*2,804,045	*1,862,673
Tennessee Central Ry.....	243,256	334,451	259,538	359,214	214,847	239,203	44,691	120,011
Texas Mexican Ry.....	10,790	206,326	23,495	219,622	496,754	418,380	*473,259	*198,758
Toledo, Peoria & Western R. R.....	299,948	329,896	320,478	351,387	83,577	98,831	236,901	252,556
Union Pacific R. R.....	19,867,391	22,886,260	37,268,254	35,739,183	18,567,020	18,083,667	18,701,234	17,655,516
Utah Ry.....	*50,031	140,423	*46,302	144,473	57,251	225,962	*103,553	*81,489
Virginian Ry.....	7,879,135	9,436,413	7,959,051	9,484,892	2,386,495	2,426,158	5,572,556	7,058,734
Wabash System:								
Ann Arbor R. R.†.....	118,136	294,065	135,893	315,605	460,296	466,747	*324,403	*151,142
Wabash Ry.†.....	1,297,490	4,247,856	1,652,191	4,670,062	7,780,082	7,721,853	*6,127,891	*3,051,791
Western Maryland Ry.....	3,643,434	4,840,822	3,792,816	4,976,487	3,337,355	3,173,350	455,461	1,803,137
Western Pacific R. R.†.....	*932,450	*805,094	*599,652	316,739	3,850,837	3,767,704	*4,450,489	*3,450,965
Wheeling & Lake Erie Ry.....	2,184,561	4,222,222	2,330,726	4,386,574	636,798	651,107	1,693,928	3,735,467

†Report of receiver or receivers.

‡Report of trustee or trustees.

*Includes St. Louis Southwestern Ry. and St. Louis Southwestern Ry. of Texas.

*Deficit or other reverse items.

Greyhound Takes Over
N. E. T. Through Routes

(Continued from page 527)

concern will be left to Greyhound, however, due to the Commission's stipulation that the stock held by the New Haven affiliate be restricted as to voting power.

The New England Transportation Company, which was organized in 1925, inaugurated through bus service between New York and Boston via the shore line and inland routes October 1, 1927. It has since extended its activities in through routes and operates as well two subsidiaries known as the Victoria Coach Line, Inc., and Berkshire Motor Coach Lines, Inc., which also operate between Boston and New York via an inland route. The Greyhound Corporation through its Eastern Greyhound division has for ten years operated competitive service on substantially the same routes.

While basic railroad passenger fares remained at 3.6 cents per mile, operations of both Greyhound and New England were carried on at a substantial profit, but commencing June 1, 1936, when the two-cents-per-mile basic fares became effective in the East, through bus passengers between New York and Boston decreased about 50 per cent and both companies were confronted with the necessity of curtailing their services and either engaging

in competitive rivalry over the traffic remaining or seeking profitable operation for both in some other way.

After some negotiations both companies agreed that the logical solution of the problem would be the merger of the through bus operations between New York and Boston of the two companies into a new corporation known as the New England Greyhound Lines, Inc. This organization has already taken over the routes between New York and Boston formerly operated by the Eastern Greyhound division of Greyhound Corporation and according to the merger plan will take over the routes of the New England Transportation Company between New York and Boston via Providence, R. I., and via Wilamantic, Conn., and between New York and Pittsfield, Mass.; and the routes of the Victoria Coach Lines, Inc., and of Berkshire Motor Coach Lines, Inc., between New York and Boston via Hartford, Conn., and Southbridge, Mass. The agreement provides also for the transfer to Greyhound of some 33 motor buses by the New England Transportation Company.

The merger does not affect the local lines at present operated by the New England Transportation, which will be continued in operation, nor does it concern in any way the extensive motor truck operations of the New Haven's affiliate. The following local lines serving in-

intermediate points in New Haven railroad territory are to be continued:

Providence, R. I.-New Bedford, Mass.
 Boston, Mass.-Providence
 Local routes in Cape Cod territory
 Providence-Worcester, Mass.
 Worcester-Fitchburg, Mass.
 Hartford, Conn.-Springfield, Mass.
 Providence-Hartford
 New Haven, Conn.-Hartford
 Hartford-Waterbury

Hartford-Winsted, Conn.

South Norwalk, Conn.-Danbury

Providence-Bristol, R. I.

New London, Conn.-Norwich

Fall River, Mass.-Warren, R. I.

When the merger becomes effective the remaining lines of the New England Transportation Company and Greyhound's merged operations will use common terminals at all points where their lines meet instead of duplicate terminals as is the present situation in a number of cities.

Communication . . .

Big Men Needed to Solve R. R. Rate Dilemma

CHICAGO.

TO THE EDITOR:

Your article, "What Will the Traffic Bear?—4" in the March 11 issue, contains a realistic and accurate report on the losses which the railroads have encountered in recent years through diversion of their business to competing forms of transportation, as well as through the steady decentralization of industry. But where is this "creative imagination" to be found which will lead the railroads out of the morass and back to a state of sound prosperity and credit?

From my own observations, I must reluctantly reach the conclusion that the railroads themselves are not now in a position to provide the means for their own salvation. The time-worn phrase about the man who couldn't see the forest for the trees would seem to apply with unusual aptness to this particular situation. The traffic officers of each line are absorbed principally in the problems confronting their own aspect of the pricing problem. The pricing of their chief commodity—freight transportation—is, however, a matter of nation-wide application, and goes far deeper than the general freight office of any one carrier, or for that matter, even beyond the established boundaries of the major rate territories.

Rate Structure a Sacred Cow

The "rate structure" has come to be regarded in many railroad circles as a sort of sacred cow, and competing forms of transportation which have bored into this structure and established their rates with some regard to their own operating costs are looked upon as heretics, professing to embrace some theory which is at logger-heads with what the traffic will bear.

The regulation of interstate motor carriers by the Interstate Commerce Commission has put off the evil day to some extent, but even this measure cannot halt the march of progress toward lower transportation costs, and other alternatives may become necessary if the cost of common carrier motor transportation exceeds what the shippers are willing to pay for transportation service.

Railroad freight rates today are published in a bewildering multitude of tariffs, classifications, and exceptions to the classifications, and each individual rate or rating is supposedly in fine balance with every other rate, and the sum of these delicately balanced figures is familiarly referred to as the "rate structure." A change in a single rate may throw the entire system out of gear, and the representatives of railroads' competitors lie awake, ready on a minute's notice to rush with protest to the tribunal whose primary concern is to maintain the status quo—the I. C. C.—thereby to thwart any attempt by the railroads to deprive them of their share of the transportation pie.

Regulatory Process Stifles Progress

So it is that the railroads' own competitors, as well as certain self-interested shippers' representatives are able to use the regulatory system, imposed upon the railroads, to throttle those efforts of the carriers themselves to meet present-day competitive conditions which get beyond the stage of a central rate

committee,—and there are measures aplenty which "die in committee."

It is not the writer's intent to blame the carriers or the officers responsible for their rate policies, for the conditions which exist and which are only too well known to the editors and readers of *Railway Age*. Those conditions may be laid at the doorstep of an earlier generation of "economic royalists" or "rugged individualists" depending on the point of view. The Commission, the complex rate and tariff structure, the devastating competition facing the railroads, and the irrepressible urge of the shipping public to lower their transportation costs are all actualities, and it will require more than a lion's share of creative imagination to tackle this problem constructively and lead the way to a logical and equitable adjustment of prices.

The Federal Co-ordinator of Transportation certainly had the vision and the ideas necessary to make a good start toward a solution of these problems. But, unfortunately, perhaps because of his affiliation with a governmental bureau, or because the traffic officers of the railroads could not keep pace with his own imaginative thinking, his valuable studies and recommendations have produced disappointingly few concrete results.

A Need for Large-Minded Traffic Men

Your editorial sounds the challenge anew. But the skeptically minded among your readers may well raise the question as to whether the men in whose hands the fate of the railroad price structure rests can display that essential quality of vision and imagination so necessary if the railroad industry as we know it today is to survive. If they do, and if they can remove the inertia which binds the present price system in an inflexible, bureaucratic orbit, there is certainly much hope for the future of the railroads as our primary means of freight transportation.

The danger lies in that human quality, common to all men, which makes us hate to tear down something on which we have spent much time and effort in creating. Many of the traffic executives of the railroads have played an important part in erecting the rate structure which is now considered inadequate and obsolete. It is upon them that the responsibility rests for the realization that although their labors have served the country and their own properties well indeed, the time is now at hand for a complete revaluation of this edifice of freight rates which they helped to build. Even the foundations will be found faulty, and in the end, it will certainly be more profitable to rebuild from the very bottom, rather than to repair and patch up the old structure which has become so completely unsuited to the demands and requirements of both the railroads and their patrons,—the shipping public.

JAMES SLOSS

THE ELECTRIFICATION of the French National Railways between Angoulême and Bordeaux completes electrification of the section between Tours and Bordeaux and permits the operation of electric trains over the 820-kilometer (508-mile route) between Paris and Hendaye on the Spanish frontier. The Tours-Poitiers sector was opened for electrical operation on June 15, 1938, and the Poitiers-Angoulême section on August 2, 1938. Completion of the project brings the total length of electrified lines of the south-western region of the State railway to 2,880 kilometers, (1,786 miles).

NEWS

\$583,282,000 for Supplies in 1938

Railway buying last year was under that reported for 1937

Purchases of fuel, materials and supplies used by the Class I railroads in the United States in connection with their operation amounted to \$583,282,000 in 1938, J. J. Pelley, president of the Association of American Railroads announced on March 23. These 1938 purchases were less than in any year since 1933 and were a reduction of \$383,101,000 under those in 1937. The reduction under the preceding year, Mr. Pelley's statement says, "resulted primarily from the serious financial condition of the railroads, and from enforced reductions in maintenance work, as well as increased efficiency in operation which particularly affected fuel purchases."

In 1930 railway purchases for fuel, materials and supplies amounted to \$1,038,500,000.

Class I railroads in 1938 expended \$243,783,000 for fuel compared with \$294,293,000 in 1937. For bituminous coal only, their purchases totaled \$180,074,000, a decrease of \$36,201,000 compared with the preceding year, while for anthracite, they totaled \$3,333,000, a decrease of \$575,000 compared with 1937. Purchases of fuel oil in 1938 amounted to \$53,553,000 compared with \$65,856,000 in the preceding year. For gasoline, there was an expenditure of \$4,120,000 in the past year, while for all other fuels, including coke, wood, and fuel for illumination, expenditures amounted to \$2,703,000.

Purchases of forest products amounted to \$56,698,000 in 1938 compared with \$104,707,000 in 1937. For cross ties, including switch and bridge ties, the railroads expended \$42,305,000 in 1938, a decrease of \$22,994,000 below such expenditures in 1937. Purchases of lumber, including timber as well as other forest products, amounted to \$14,663,000, which was a decrease of nearly \$25,000,000 under the preceding year.

Class I roads, in 1938, purchased iron and steel products amounting to \$152,176,000 compared with \$359,409,000 in 1937, or a decrease of \$207,233,000. For locomotive and car castings, beams, couplers, frames and car roofs, the railroads spent \$22,221,000 in 1938 compared with \$62,373,000 in the preceding year. Purchases of steel rail, including new and second-hand except scrap, amounted to \$23,742,000 in 1938 compared with \$44,424,000 in the preceding

A. A. R. Accused of Violating Anti-Trust Act

Thurman Arnold, assistant attorney general in charge of the Anti-Trust Division, has revealed that about a month ago the Justice Department received a complaint from a large trucking firm to the effect that the Association of American Railroads was violating the Sherman Anti-Trust Act by going on record as being opposed to the railroads publishing joint rates with trucking companies. Mr. Arnold went on to say that his division was investigating the charges of the trucking firm, but that no decision has been reached.

As reported elsewhere in this issue, Luther M. Walter, co-trustee of the Chicago Great Western, in his testimony before the House Committee on Interstate and Foreign Commerce, complained of this matter of joint rail-truck rates and the A. A. R. position on them.

year, while for track fastenings, track bolts, spikes, and other materials used in connection with the laying of rails, the railroads expended \$16,347,000, which was a decrease of \$20,211,000 under the preceding year.

For wheels, axles and tires, the railroads expended \$16,691,000 compared with \$31,173,000 in the preceding year, while for bar iron and steel, spring steel, tool steel, unfabricated rolled shapes, wire netting and chain, boiler, firebox, tank and sheet iron and steel of all kinds their expenditures amounted to \$7,910,000 compared with \$32,186,000 in the preceding year. Purchases of interlocking and signal material in 1938 totaled \$7,484,000, and for standard and special mechanical appliances for locomotives, \$6,447,000.

Miscellaneous purchases made by the Class I roads totaled \$130,355,000 in 1938 compared with \$207,974,000 in 1937. Coming under the heading were \$19,594,000 for glass, drugs, chemicals, including chemicals for timber treatment, and painters' supplies; \$14,237,000 for lubricating oils and grease, illuminating oils, boiler compound and waste; \$12,958,000 for stationery and printing; \$15,886,000 for commissary supplies for dining cars, camps and restaurants; \$8,051,000 for all electrical materials; \$7,240,000 for ballast; \$3,696,000 for passenger car trimmings; and \$5,792,000 for locomotive, train and station supplies.

Railroad Revamp Bills in Congress

House sub-committee approves Chandler measure as Senate gets Wheeler proposal

Proposals to expedite railroad reorganization procedures were advanced this week when a House judiciary sub-committee voted to favorably report to the Judiciary Committee the Chandler voluntary railroad reorganization bill and Senators Wheeler, Democrat, of Montana and chairman of the Senate interstate commerce committee, and Truman, Democrat, of Missouri, introduced in the Senate their long-awaited bill revamping the present railroad reorganization law. Early action is expected on the Chandler bill, but Senator Wheeler has set no date for hearings on his measure.

In a statement accompanying the bill, Senators Wheeler and Truman said that the bill, S. 869, is one of a series of bills which they intend to introduce in this Congress dealing with various phases of the railroad problem. Senator Wheeler has already offered a measure which would give the Interstate Commerce Commission control over railroad holding companies, wholly-owned subsidiaries, banking firms dealing with railroads, and railroad equipment firms.

The bill may be roughly divided into three parts: (1) Provisions designed to insure the soundness of the financial structures that will emerge from the reorganization process; (2) Provisions that will expedite and facilitate the reorganization procedure itself; and (3) Provisions of a reform nature to eliminate "unwholesome" practices in the reorganization procedure.

Under the provisions of the bill responsibility for devising sound and constructive reorganization plans for insolvent roads would rest jointly with the new reorganization court and the commission. The bill also provides that before any reorganization plan can be considered by the new court, which would have jurisdiction over both section 77 proceedings and equity proceedings either now in existence or contemplated, specific standards must be established within which a particular carrier's reorganization plan must fit. Under this requirement, the commission is directed to determine capitalization, fixed charges, interest-bearing debt, and earnings which a new or reorganized railroad would be expected to support.

After the commission has determined the

capitalization and fixed charges which a carrier in the process of reorganization would be likely to support, all reorganization plans must be based on the commission's findings before the reorganization court would give them consideration.

Flexible provisions are set up in the bill by which pending reorganization cases may be taken over by the court. In the event that the court's work becomes too heavy, it may petition the Chief Justice of the United States Supreme Court for additional help, and the Chief Justice may temporarily assign any federal circuit judge to the reorganization court.

After the recitation of a lengthy declaration of policy of the Congress in dealing with railroad reorganizations the bill provides that no plan shall be made effective if there is substantial reason to believe:

(a) That the fixed charges thereunder (of whatsoever nature, including fixed charges on debt, amortization of discount on debt, and rent for leased railroads) are in such amount that, after due consideration of the probable prospective earnings of the property in the light of its earnings experience and of such changes as may reasonably be expected, there will not be adequate coverage of such fixed charges by the probable earnings available for the payment thereof; or

(b) That the reorganized company under such plan will in the reasonably foreseeable future be insolvent or unable to meet its debts as they mature, or in need of further reorganization in the public interest; or

(c) That the plan leaves inadequate means for such future financing as may be requisite and possible, or that the effect of any future financing, or of the exercise of any options, warrants, or other rights, for which provision is made in the plan will be to create a capital structure not in conformity with the policy and standards set forth in this subsection; or

(d) That in the light of the earnings experience of the property and of such changes as may reasonably be expected, the expectable future average annual earnings of the property would be insufficient to provide some earnings applicable to, though not necessarily distributable to, every class of securities of the reorganized company under such plan, other than options or warrants to receive or subscribe for securities of the reorganized company; or

(e) That the total capitalization, fixed charges, amount of fixed interest-bearing debt, cumulative contingent charges, non-cumulative contingent charges, amount of contingent interest-bearing debt or cumulative dividend requirements provided under the plan, or any of them, are in excess of the maximum to which the property may safely be subjected consistently with the policy and standards set forth in this subsection, and with any determination of value which may have been pursuant to the next to the last paragraph of subsection (e), all after due consideration of the probable prospective earnings of the property in the light of its earnings experience and of such changes as may reasonably be expected.

"For the purposes of this section," con-

tinues the bill, "it shall be rebuttably presumed that the expectable future average annual earnings of the property will not exceed the annual average earnings of the property during the six calendar years preceding the date of the close of hearings by the commission on any matter to which such presumption may be relevant: *Provided*, That there shall be no presumption that the expectable future average annual earnings will equal such average earnings."

Other provisions of the bill, says the Senators' statement, include the following:

(a) Provision to assure the independence and disinterestedness of trustees and receivers and their counsel;

(b) Provisions to protect the access of the trustee or receiver to books and records of the former management;

(c) Provisions to insure adequate investigation of irregularities, fraud, misconduct or mismanagement that may have occurred prior to bankruptcy or receivership, and to insure recovery from wrong doers, of losses caused the railroads;

(d) Provisions to disqualify any person knowingly responsible for irregularities, frauds, misconduct or mismanagement from acting as a director or officer of the reorganized company;

(e) Provisions to reform the existing practice with respect to allowances for compensation and expenses;

(f) Provisions liberalizing the right of interested persons to intervene in the proceedings, and to assure representatives of employees the right to be heard on all matters affecting the interest of employees;

(g) Provision for early and independent determination of the size of the new company's maximum financial burden, divorced from the question of how the securities of the reorganized company shall be distributed as between the various classes of creditors and stockholders;

(h) Provisions clarifying the right of the court to invoke the remedy of a sale at not less than a fair upset price;

(i) Provision for reorganization plans geared to the earning power of the property rather than to unrealistic and fanciful concepts of value;

(j) Provisions requiring the payment of interest on bonds during receivership, if adequately covered by earnings, and if consistent with proper maintenance of the property;

(k) Provision for designation of a mediator to compose differences between persons interested in the reorganization.

The Chandler bill has received the approval of the sub-committee and is expected to be reported favorably by the full judiciary committee very shortly. Little opposition is expected in the House, but due to the fact that there is no companion bill in the Senate, it is not known just how speedily that body will act upon it. Before the sub-committee acted upon the voluntary reorganization bill, it added four amendments, which Representative Chandler, chairman of the sub-committee, listed as follows:

1. A limitation of five years upon the operation of the reorganization procedure provided in the bill;

2. A requirement that 25 per cent of each class of creditors must agree to the reorganization plan proposed before the railroad can take its petition to the commission for approval;

3. The commission must find that the plan submitted is in the public interest, will not impair the ability of the carrier to perform its service and is practicable and feasible;

4. Reorganization petitions are to be dismissed if the carriers fail to carry out their stipulations while the plans are still pending before the courts.

As now written, the bill provides that a voluntary reorganization plan must have the approval of 75 per cent of all creditors and 60 per cent of each class before it can be approved by the courts.

Representative McLaughlin, Democrat,

of Nebraska, has introduced in the House H. R. 5182, a companion bill to the rail reorganization bill offered in the Senate by Senators Wheeler and Truman.

Stoker Order Postponed

The Interstate Commerce Commission has further postponed the effective date of its order in the automatic stoker case to April 15. As noted in the *Railway Age* of March 4 the commission's order in this case was upheld by a three-judge federal court at Cleveland, Ohio, on February 28.

Hardy to Head Railway Mail Service

John D. Hardy, superintendent of the New York Division of the Railway Mail Service, has been appointed general superintendent of the service, to succeed Stephen A. Cisler when the latter retires on May 1. Mr. Hardy has been superintendent at New York for the past six years.

Hearings to Be Held on Beaver-Mahoning Canal

The House committee on rivers and harbors will hear opponents of the proposed construction of the Beaver-Mahoning canal beginning March 28. It has been announced that at that time testimony with respect to the report of the Corps of Army Engineers will be received.

Tax Commissioners Elect

At the annual meeting of the Western Association of Railway Tax Commissioners held in Chicago on March 14, the following officers were elected for the ensuing year: president, R. A. Miller (C. & N. W.); vice-presidents, J. B. Angell (C. R. I. & P.), E. A. McCrary (No. Pac.), and K. W. Fischer (C. B. & Q.); secretary-treasurer, O. G. Edwards (C. M. St. P. & P.).

P. R. R. Reduces Employee Accidents

Accidents to employees of the Pennsylvania per million man-hours worked were reduced 14 per cent in 1938, it was reported, when President M. W. Clement announced the winners of the road's 13th annual safety contest on March 19. The entire system showed 5.88 accidents per million man-hours, compared with 6.84 in 1937. The Western region showed the best safety results for the year.

N. J. Roads Appeal to Public on Tax Levies

The 13 member roads of the Associated Railways of New Jersey are currently placing publicity advertising in local newspapers in the state to acquaint citizens with the inequality of railroad taxes levied by the state. On March 20, four-column public discussions were placed in several of the larger newspapers and it is planned that similar publicity will be carried in practically every daily and weekly newspaper in the state.

The notice of March 20, entitled "What are the Facts about New Jersey's Railroad Taxes" pointed out, among other things, that New Jersey taxes average \$9,000 per mile of road, eight times as much as the

average for all states; that in spite of reduced earnings, railroad taxes continue at "prosperity" levels, and that full payment of contested levies would force several large systems into receivership additional to those now under court protection. Future publicity is expected to discuss the effects of bankruptcy on local real estate and business enterprises and railroad purchases, employment, services, etc.

I. C. C. Denies Petition of Negro Congressman

The Interstate Commerce Commission has denied the petition of Negro Congressman Mitchell of Chicago to have his "Jim Crow" case against the Chicago, Rock Island & Pacific reopened for further hearings and argument. The commission recently dismissed his case against the carrier on the grounds that no discrimination against the colored race exists on the Rock Island at this time.

Wheeler Asks \$10,000 for Rail Finance Committee

Chairman Wheeler of the Senate interstate commerce committee has asked for an additional appropriation of \$10,000 for the use of his committee in connection with its investigation of railroad financing. Senator Wheeler explained that the money is needed in order to enable the committee to complete the preparation of a series of reports which are based on the results of the probe.

"William Crooks" Steams to the Fair

One of America's historic locomotives, the "William Crooks," built at Paterson, N. J. in 1861, and now owned by the Great Northern, is now traveling under its own power from St. Paul, Minn. to New York, where it will be part of the exhibition, Railroads on Parade, at the New York World's Fair. The locomotive, pulling two ancient coaches, left St. Paul on March 14, with a schedule providing for arrival in Chicago on March 18; Huntington, Ind., on the evening of the same day; Marion,

Ohio on March 19; Kent, Ohio on March 20; Meadville, Pa. on March 21; Salamanca, N. Y. on March 22; Hornell, N. Y. on March 23; Susquehanna, Pa. on March 24; Port Jervis, N. Y. on March 25; and Paterson, N. J. on March 26.

Locomotive Slipping Tests— A Correction

In the fourth paragraph of the article entitled "Steam Locomotive Slipping Tests," by T. V. Buckwalter and O. J. Horger, page 377 of the March 4 issue of the *Railway Age*, the second sentence reads: "Slipping tests at train speeds of from 61 to 82 m.p.h. with maximum slipping speeds from 123 to 134 m.p.h. indicated that no rail damage developed of sufficient importance to necessitate rail removal." The maximum slipping speeds should have read "from 123 to 164 m.p.h."

Reports on Motor Applications

With Commissioner Rogers dissenting the Interstate Commerce Commission's Division 5 has approved, subject to conditions, the application of the Texas & Pacific Motor Transport Company, affiliate of the Texas & Pacific, for a common-carrier trucking certificate on a route between Monahans, Texas, and Lovington, N. M.

Examiner C. E. Simmons has recommended in a proposed report that the commission grant the "grandfather-clause" application of the Chicago, Rock Island & Pacific for a common-carrier trucking certificate on a route between Kansas City, Mo., and St. Joseph.

"Exposition Flyer's" Schedule Changed

The schedule of the Exposition Flyer, which the Chicago, Burlington & Quincy, the Denver & Rio Grande Western and the Western Pacific will place in service between Chicago and San Francisco on June 10, will be lengthened as a result of objections raised by competing lines that the 57-hr. schedule westbound violates an understanding that all trains between Chi-

cago and California on schedules of less than 60-hr. will be extra-fare trains. As a result of conferences with C. E. Johnston, commissioner of western railroads, the westbound schedule will be adjusted to 59-hr. 55 min., the same schedule as that of the San Francisco "Challenger" operated by the Chicago & North Western, the Union Pacific and the Southern Pacific, while adjustments will be made in schedules of the trains of competing lines, including that of the San Francisco "Overland Limited" which operates on a schedule of 60-hr. westbound.

P. & S. Convention

The Executive committee of the Purchases and Stores division, A. A. R., at a meeting in Chicago on March 14, voted to hold a convention of its entire membership in that city on June 14-15. As the division has not held a convention for two years, the membership will take action at this meeting on the work completed by committees in 1938 as well as in 1939. New officers will also be elected. As in previous years when full conventions of the division were held, the sessions will be open to the railroad public and plans are now being made to insure a large attendance.

A. S. M. E., Chicago Section, to Discuss Car Design

At the regular meeting of the Transportation division of the American Society of Mechanical Engineers, Chicago section, scheduled to be held at the Chicago Lighting Institute, 20 North Wacker drive, Chicago, on April 4 at 7:30 p. m., the subject Modern Lightweight Car Construction will be presented by W. H. Mussey, engineer of research, Pullman-Standard Car Manufacturing Company. Both the technical and economic aspects of railway car design will be covered in this paper. At the conclusion of the formal paper, it is planned to have a roundtable discussion in which a number of prominent designers of railway car equipment, both passenger and freight, will be invited to participate.

15-Ton Exhibit Shows How Locomotives Operate

A 15-ton exhibit to demonstrate how a railroad locomotive operates is being prepared for the Museum of Science and Industry by the Chicago and Western Illinois at its shops in Danville. The exhibit consists of a portion of the right side of a passenger locomotive. It includes the pilot, the side frame, the valve chamber, a cylinder, a main rod, a side rod, two driving wheels, and the connecting mechanism. It will be mounted and balanced so that all working parts will be driven by a small motor while lights will show the movement of steam into the valve chamber and then into the cylinder, which has been cut away to show the piston and connecting rod.

Accounting Division Annual Meeting at Toronto

The annual meeting of the Accounting Division, Association of American Railroads, will be held at the Royal York



The Great Northern's "William Crooks," Built in 1861, Is on its Way to New York for Exhibition at the World's Fair

Hotel, Toronto, Ont., on June 27, 28 and 29, according to an announcement sent out last week by the Division's chairman—T. F. Darden, vice-president of the Atlantic Coast Line. The program for the convention will include an address by C. D. Howe, minister of transport, Dominion of Canada, "in addition to addresses by other prominent transportation officials;" the detailed agenda is being prepared by Secretary E. R. Ford and will be distributed to members in advance of the convention. E. A. Leslie, comptroller of the Canadian Pacific, Montreal, Que., is chairman of the committee on arrangements for the meeting.

Freight Car Loading

Loading of revenue freight for the week ended March 18 totalled 594,568 cars, the Association of American Railroads announced on March 23. This was an increase of 2,877 cars, or five-tenths of one per cent, above the preceding week, an increase of 54,203 cars, or 10 per cent, above the corresponding week in 1938, but a decrease of 160,354 cars, or 21.2 per cent, below the same week in 1937.

As reported in last week's issue, the loadings for the previous week ended March 11, totalled 591,691 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings			
For Week Ended Saturday, March 11			
Districts	1939	1938	1937
Eastern	132,233	121,150	169,549
Allegheny	116,566	103,965	157,201
Pocahontas	42,360	37,807	56,927
Southern	94,032	92,283	119,164
Northwestern	69,594	66,129	79,912
Central Western	92,055	89,656	107,033
Southwestern	44,851	45,740	54,713
Total Western Districts	206,500	201,525	241,658
Total All Roads...	591,691	556,730	744,499
Commodities			
Grain and Grain Products	31,211	31,429	28,387
Live Stock	10,175	10,954	11,487
Coal	118,314	105,274	166,486
Coke	6,966	5,127	11,844
Forest Products	25,927	27,613	38,662
Ore	7,559	8,722	10,128
Merchandise L.C.L.	152,422	150,694	169,817
Miscellaneous	239,117	216,917	307,688
March 11	591,691	556,730	744,499
March 4	598,691	552,892	730,329
February 25	560,609	511,939	692,393
February 18	580,071	535,866	711,314
February 11	579,918	542,991	688,523
Cumulative Total, 10 Weeks	5,790,234	5,521,875	6,952,734

In Canada.—Carloadings for the week ended March 11 totaled 41,753 cars, an increase of 589 cars over the previous week but a decrease of 4,293 from a year ago, according to the weekly statement of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Mar. 11, 1939	41,753	23,088
Mar. 4, 1939	41,164	23,827
Feb. 25, 1939	39,879	22,111
Mar. 12, 1938	46,046	23,051
Cumulative Totals for Canada:		
Mar. 11, 1939	400,258	227,318
Mar. 12, 1938	451,601	221,324
Mar. 13, 1937	466,098	276,639

Railroads Use Newspaper Space

An advertisement being run by the Illinois Central in newspapers along its lines calls attention to the large amount of

newspaper space purchased by the railroads. "Even in depression times," the copy reads, "the newspaper advertising budget of the Illinois Central alone runs into several hundred thousand dollars, and the railroads as a whole spend well up into the millions. The railroads, moreover, are fairly steady customers of the newspapers. For example, one kind of advertising the Illinois Central does is that in which the president discusses the policy of this railroad and of the railroads in general, in order that employee effort may be fully co-ordinated and public understanding and good will proportionately cultivated. This one type of Illinois Central advertising has been appearing in on-line newspapers monthly for nearly nineteen years.

"There are about 500 such newspapers. Space per paper has averaged at least twenty column inches monthly over the nineteen years, or 240 column inches, nearly two full pages, a year. Multiplying by years and papers gives us a grand total use over that period of at least 2,280,000 column inches, or something like 16,000 newspaper pages.

"If messages have averaged 200 words, then nearly 23,000,000 printed words have been placed before readers in Illinois Central territory by this one railroad in this one campaign."

President Signs Independent Offices Bill

The President has signed H. R. 3743, the Independent Offices Bill for the fiscal year ending June 30, 1940, which carries the appropriations for the Interstate Commerce Commission, the National Mediation Board and the Railroad Retirement Board. The bill, as finally approved by the President, provides \$8,908,000 for the commission, \$123,404,000 for the Railroad Retirement Board, and \$379,930 for the National Mediation Board. The only reduction made after the bill left the House was in the item for the National Railroad Adjustment Board which is included in the Mediation Board total. This House figure of \$198,930 for salaries and expenses was pared down to the extent of \$10,000. A breakdown of the various items was given in the *Railway Age* for February 18, page 321.

February Operating Revenues 10.4 Per Cent Above February, 1938

Preliminary reports from 93 Class I railroads, representing 82.3 per cent of total operating revenues, made public on March 17 by the Association of American Railroads, show that those railroads, in February, had estimated operating revenues amounting to \$227,976,660 compared with \$206,576,440 in the same month of 1938 and \$349,798,677 in the same month of 1930. The February gross was 10.4 per cent above that of February, 1938, but 34.8 per cent below February, 1930.

Freight revenues of the 93 roads in February, amounted to \$184,751,011 compared with \$163,137,211 in February, 1938, and \$270,311,687 in February, 1930—13.2 per cent above the former, but 31.7 per cent below the same month in 1930. Passenger revenues totaled \$24,778,126 compared with \$25,490,885 in February, 1938, and \$50,-

109,432 in February, 1930—2.8 per cent below the former, and 50.6 per cent below the same month in 1930.

December Accident Statistics

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of December, 1938, now in preparation for the printer, will show:

Item	Month of December		12 months ended with December	
	1938	1937	1938	1937
Number of train accidents	469	613	5,682	8,412
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	145	125	2,298	2,569
Injured	122	151	2,429	2,629
Passengers on trains:				
(a) In train accidents:				
Killed .....	...	...	52	3
Injured	41	51	475	536
(b) In train-service accidents:				
Killed	3	3	17	15
Injured	137	169	1,797	1,972
Travelers not on trains:				
Killed .....	...	1	9	13
Injured	73	90	736	785
Employees on duty:				
Killed	39	52	479	666
Injured	1,529	1,685	16,163	23,629
All other nontrain-passengers:				
Killed	228	201	1,644	2,084
Injured	633	699	5,653	7,141
Total—All classes of persons:				
Killed	415	382	4,499	5,350
Injured	2,535	2,845	27,253	36,692

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than \$150 to railway property.

** Casualties to "Other nontrain-passengers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties for all classes of persons, including both trespassers and nontrain-passengers, were as follows:

	Number of accidents	1938	1937	1936	1935
Persons:					
Killed	222	187	1,517	1,875	
Injured	482	521	4,018	5,136	

No 1938 Accidents from Transport of Explosives

Approximately one-half billion pounds of high explosives including, among other things, dynamite, black and smokeless powder, explosive ammunition, and blasting caps, were transported by the railroads of the United States and Canada in 1938 without accident, death or injury, according to the Bureau of Explosives of the Association of American Railroads.

This is the twelfth consecutive year that there has not been a person killed or injured in connection with the movement over the railroads of the United States and Canada of the billions of pounds of dynamite, black powder and other dangerous explosives which have been transported in that time.

The railroads in 1938, the statement says, "also transported great quantities of other dangerous articles such as gasoline, acids and corrosive liquids, inflammable liquids, inflammable solids, poisonous articles and compressed gases, with only one fatality and 31 injuries. The one fatality resulted from the derailment of a tank-car of gasoline. Of the 31 injured, none was serious."

The total property loss in 1938 incidental to the transportation or storage on railway

property of explosives of all kinds or dangerous articles other than explosives totaled \$294,555, of which \$231,982 was chargeable to gasoline fires in tank cars. In 1937 the total property loss amounted to \$265,900 of which \$216,303 was chargeable to gasoline fires in tank cars.

Walter P. Murphy Gives 6¾ Millions for New School

Walter P. Murphy, chairman of the board of the Standard Railway Equipment Company and president of the Union Metal Products Company and the P. H. Murphy Company, Chicago, has made a gift of \$6,735,000 to Northwestern University, Evanston, Ill., for the foundation of an institute of technology. The donation was made through the Walter P. Murphy Foundation of Chicago. The purpose of the school will be to produce men of social vision and sound training who have a definite understanding of the problems awaiting them in industry. This will be accomplished through joint action with the industries of Chicago and the midwest in a co-operative plan of education. Students will spend alternate twelve-week periods in classes and in industries. The institute will provide for 800 students in civil, mechanical, electrical and chemical engineering. Of the \$6,735,000 donation, \$6,475,000 will be used for constructing and equipping the buildings, which will be ready in the fall of 1940, while \$210,000 is set aside for an anticipated operating deficit in the first five years, and \$50,000 will be used for scholarships and fellowships.

E. M. C. Diesel Locomotive Carried Over Ground to World's Fair Post

Six days of straining, tugging and delicate engineering were required to haul a two-unit Diesel-electric locomotive weigh-

ing 560,000 lb. a distance of about five city blocks over the "made" ground of the New York World's Fair site between the unloading tracks of the Long Island and a square in front of the General Motors exhibit building where the locomotive is to be displayed. Built by the Electro-Motive Corporation, a subsidiary of General Motors, the two units of the locomotive are similar to "A" and "B" units, respectively, of a 6,000-hp., three-unit locomotive placed in service by the Seaboard Air Line in December, 1938. Each unit, develops 2,000 hp. from two 1,000-hp. Diesel-electric power plants, as do those of the S. A. L. locomotives, and weight and size characteristics are substantially the same.

Weighing together 560,000 lb. (without sand and water) and extending 140 ft. "bow-to-stern," the two units were transported over the ground between the unloading tracks and the exhibit building by 22 men, a motor truck and a crane by the use of short temporary sections of track. The main difficulty lay in getting the weighty machine over two sections of boggy ground. In all, the operation cost about \$2,000 and in the six days required to move the one-quarter of a mile, the locomotive, under its own power on main-stem rails could have traveled 17,000 miles.

A portion of the working parts of the locomotive will be enclosed in glass to permit visitors to explore the innards of Diesel-electric power.

Club Meetings

The New England Railroad Club will hold its next meeting on April 11 at 6:30 p. m., in the Hotel Touraine, Boston, Mass. R. F. Harrington, foundry superintendent and chief metallurgist, Hunt-Spiller Manufacturing Corporation, will present a paper entitled "Cast Iron—From Coast Defense Guns to Modern Locomotive and Industrial

Castings." The address will be illustrated by lantern slides.

The next meeting of the Indianapolis, Ind., Car Inspection Association will be held on April 3 at the Hotel Severin at 7 p. m.

The Northwest Car Men's Association will hold its next meeting on April 3 at 8 p. m., at the Midway club, 1931 University avenue, St. Paul, Minn. "The Relation of Car Construction and Maintenance to Safety" will be presented by W. J. Patterson, director, Bureau of Safety, Interstate Commerce Commission.

The Car Foremen's Association of Omaha, Council Bluffs and South Omaha Interchange will hold its next meeting on April 13 at Burlington station, Omaha, Nebr., at 1:30 p. m. C. B. Stemple will discuss "Rules 68 to 82."

Transportation Conference to Meet March 27

The Transportation Conference of 1938-1939 which has been sponsored by the Chamber of Commerce of the United States, will hold a meeting in Washington, D. C., on March 27. The agenda for the March 27 meeting will contain the following questions:

1. Should a governmental agency be instructed by Congress to conduct promotional and investigational activities affecting railroads?
2. If so, should this agency be
 - (a) The Interstate Commerce Commission;
 - (b) An administrator or board working in connection with the commission;
 - (c) A new independent transportation board;
 - (d) An interdepartmental committee?
3. Should the duties of such agency include:
 - (a) Planning and promoting consolidations, coordinations and other opportunities for economies in railroad service;
 - (b) Investigation and reporting, with recommendations, on relative economy and fitness of rail, motor and water carriers with a view to promoting joint and co-operative use and abating wasteful and destructive competition;
 - (c) Investigation and reporting, with recommendations, on the extent of any direct or indirect government financial support of these three forms of transportation, taking into account all relevant factors?

"Hope Springs Eternal" in Plans of N. Y. Port Authority

Announcement that the Port of New York Authority is renewing its negotiations with the railroads entering the New York district to ascertain the whys and wherefores of a possible reorganization of terminal facilities at the port, is contained in the annual report of the Authority as submitted on March 13 to the governors and legislatures of the states of New York and New Jersey. The report points out that one of the important duties assigned



Courtesy Electro-Motive Corp.

It Took Six Days and \$2000 to Move This 560,000 Lb. Electro-Motive, Diesel-Electric Locomotive 1,500 Ft. From Railroad to General Motors Building at the New York World's Fair

to the Authority by the two states in 1922 was to unify and co-ordinate railroad terminal operations within the port district and that some progress had been made along this line, especially in construction and operation of Union Inland Terminal No. 1 for lease to the railroads as a consolidating facility for less-than-carload freight. It goes on to state, however that the benefits to the railroads "have not been so clear because in few if any instances have the initial steps been expanded into a comprehensive reorganization in the New York district as originally contemplated."

To carry out this task, therefore, the Port Authority is now engaged in negotiations with the carriers for a comprehensive joint canvass of the gains obtainable in unification of station operations, consolidation of the marine operations and waterfront yards, float bridges and lighterage piers. The Authority is also considering bringing up the question of the substitution of all-rail cross-harbor operation and joint terminal trucking in place of marine operation, wherever possible. It is reported that data previously collected on these subjects are in many cases several years old and that many changes in the set-up have taken place in the interim. Hence the decision to renew negotiations.

Relative to suburban passenger traffic in New York, including commuting service of the steam railroads, the Authority promises to offer separate findings on the subject later in the year embracing physical and operating plans and financial recommendations, in accordance with directions given it by the New Jersey legislature in 1938.

Clerks' Union Says R. E. A. Violates I. C. C. Act

Asserting that such action would "alleviate undue hardships to the employees" of the Railway Express Agency the Brotherhood of Railway Clerks, through its president, George M. Harrison, has asked the Interstate Commerce Commission to order R. E. A. and the railroads to cease and desist from certain alleged violations of the Interstate Commerce Act. The complaint charges that R. E. A. and railroads having pooling contracts with it have recently, without the commission's approval, instituted a new and different arrangement for the division of express transportation earnings, "which departs materially from the terms approved by the commission in Finance Docket No. 7316." The Brotherhood's complaint goes on to say that the Express Agency "no longer computes the actual amount due individual roads, as provided in its operating agreements with them, but now apportions 'aggregate earnings on the basis of a fixed percentage arrived at by a monthly average during a test period from June, 1937, through May, 1938.'"

The complaint also alleges that the division of express transportation earnings in the manner now followed by the R. E. A. and the participating railways "is unlawful under section 5(1) of the Interstate Commerce Act, in that such division has not received the 'specific approval' of the commission, as required by that section, and the commission has not found after

hearing that such division of earnings is in the interest of better service to the public or economy of operation, that it will not unduly restrain competition, and that it has been assented to by all the carriers involved."

The Brotherhood also points out that the new division of earnings has resulted in undue hardships having been imposed upon several hundred employees of the R. E. A. with no provision having been made by the R. E. A. to avoid or alleviate the hardships. "Through the unlawful institution of the new division of earnings by the R. E. A. and participating railways," continues the complaint, "this complainant, the duly accredited and recognized representative of such employees under the Railway Labor Act as amended, has been deprived of the opportunity of seeking from the commission terms and conditions 'found by the commission to be just and reasonable' to prevent or alleviate such hardships."

The union requests that after due hearing and investigation the commission enter an order commanding the defendants to establish and put in force and apply in the future in the division of express transportation earnings in lieu of the method now used such a method "as shall be specifically approved by the commission and shall be in the public interest and will prevent or alleviate undue hardships to the employees of the R. E. A."

I. C. C. Hears M. O. P. Oral Argument

Violent disagreement with Examiner Jewell's proposed plan of reorganization for the Missouri Pacific and threats of prolonged litigation were heard at the outset of the oral argument before the Interstate Commerce Commission on this company's revamping case. E. S. Ballard, representing the debtor company, told the commission at the beginning of his argument that the real question before it was whether or not the debtor company is going to share in the assets of the new company. He then went on to say that agreement between the parties to support the debtor's modified plan is still in force despite the fact that the Stedman bondholders' committee denies that it is.

Mr. Ballard asked the commission to reject the examiner's plan which would wipe out the preferred and common stockholders and turn the property over to the various bondholder groups. He also asked that the commission reopen the case for further hearing in view of the fact that the examiner's plan is such a departure from the debtor's modified plan that, in his opinion, the debtor could never agree to it and is entitled to a further hearing in the case. The commission was also told that the examiner's plan could never be sustained under the law while, on the other hand, the debtor's modified plan met all the requirements of section 77 of the Bankruptcy Act.

Assailing what he called the "par for par" theory of distribution of new securities Mr. Ballard contended that the examiner erred in adopting this method in his allocation of securities under his proposed plan. Also, Mr. Ballard said, the equity holders could participate in the new com-

pany if the claims of creditors are pared down, and he then told the commission that the debtor's modified plan, which he has espoused, meets all the requirements of the "quid pro quo" theory, in which for a promise from the debtor to refrain from litigation, the creditors allow the debtor to participate in the new company.

Mr. Ballard closed his 90-minute argument by warning the commission that there could be a reorganization of the road on the lines of the debtor's modified plan, which would give the present equity holders warrants carrying the right to purchase stock at a given price over a period of 15 years, but that if the commission insists on following any other plan which would wipe out the equity interest in toto, nothing but endless litigation will result.

The position of the Stedman committee was outlined by W. Lloyd Kitchell, who began by saying that the bondholders "will strenuously object to any reopening of the case." His committee takes the position, Mr. Kitchell told the commission, that it is released from the agreement to support the debtor's plan because of the lapse of time and the changed conditions which now obtain. He said that his committee had opposed the debtor's plan from the outset and that the bondholders were continuing to oppose it as unjust and inequitable. In reply to a question by Commissioner Mahaffie, Mr. Kitchell said that his committee would not feel justified in waiving \$15,000,000 of interest which has accrued since the time that the agreement was entered into, almost a year and a half ago.

Others appearing at the oral argument were: W. N. McFarland, general solicitor for the Chicago, Burlington & Quincy; W. A. Northcutt representing the Cairo & Thebes bonds; Parker McClester for the International Great Northern first mortgage bonds; L. D. Adkins for the New Orleans, Texas & Mexico bonds; Edward A. Bourne for the St. Louis, Iron Mountain & Southern bonds; L. M. Walter for the Missouri Pacific common stockholders' committee; D. B. Steimle for the General Mortgage Bondholders' committee; Paul F. Plummer for B. F. Edwards, Trustee; H. C. McCollom for the Irving Trust Company of New York City; H. L. M. Cole for the Equitable Trust Company of New York City; Paul Williams for the Chemical Bank of New York City; C. M. Clay, general railroad counsel for the Reconstruction Finance Corporation; D. L. Newborg for J. F. Dewald, Intervener; Leslie Craven for the New York Trust Company; B. M. Anderson for the Connecticut General Life Insurance Company; and Daniel Willard, Jr., for the Railroad Credit Corporation.

Trucks a Factor in Lowering Rail Freight Rates

"The effect of increased motor truck competition in lowering railroad freight rates on some commodities is brought out in an analysis reported by the Bureau of Agricultural Economics," says a March 17 press release from the United States Department of Agriculture. The compilation, it is pointed out, shows an increase of nearly 100 per cent in the relative share

of the total inter-city traffic by motor truck during the current decade, in contrast with a decline of over 14 per cent in the railroads' proportion of that business.

Examples of commodities "whose rail rates have voluntarily been cut in response to truck competition," are cited by James C. Nelson in an article—Effects of Trucking on Freight Rates—in the March issue of the Bureau's "Agricultural Situation." The list includes cotton, citrus fruits (especially from Florida to the East), apples, California raisins, dairy products from Wisconsin and Iowa, hogs, automobiles, gasoline, canned goods and groceries, sugar, drugs and chemicals, cigarettes, rayon yarn, dry goods, clothing, boots and shoes, fertilizers, anthracite coal, sand, gravel, crushed stone and slag.

On the other side of the picture, Mr. Nelson states that "lack of vigorous truck competition may be a significant factor in explaining the relative stability of rail rates on such commodities as stocker and feeder cattle, sheep, wheat and grains, berries, peaches, cantaloupes, cabbage, tomatoes, white potatoes and other fresh vegetables, tobacco, lumber, furniture, bituminous coal, building stones, salt, cement, ores, and other products moving long distances or in bulk."

"This does not mean," he says, "that truck competition may not have been vigorous for these commodities on particular hauls or that the rates for these hauls may not have been reduced as a result. It is possible that the Interstate Commerce Commission in granting temporary selective increases in 1931 and 1935 had in mind the fact that many commodities on which increases were allowed were not especially vulnerable from the standpoint of truck competition."

The article concludes with the statement that unless an alteration is made in the policy of the railroads to maintain or increase rates—at times despite general price deflation—on traffic believed not susceptible to diversion or destruction, "increasing diversion of long-haul and heavy traffic to other means of transportation is likely. Sources of traffic may disappear where shifting to other agencies of transport is not possible, unless farmers can increase their efficiency of production to offset higher rates."

"This is also true even when the long-

haul rates are kept stable in face of declining transport costs for competing shippers nearer markets. If producing areas develop closer to large consuming centers, the ten-mile volume of traffic in farm products will tend to decline."

Rivers and Harbors Congress Meets in Washington

The National Rivers and Harbors Congress met in Washington, D. C., March 21-24, to consider "a vast program of waterway improvements as an adjunct to the national defense." Citing reduced budgetary allowances for rivers and harbors work, officials of the organization declared that this trend is entirely out of line with the Administration's national defense program and pointed to statements by Major General Julian L. Schley, Chief of Army Engineers, and General John J. Pershing, in support of their contention that "national defense alone justifies cost of the waterway program."

The projects committee of the Congress headed by Senator John E. Miller, Democrat of Arkansas, met on March 21 and 22 and the full Congress held its sessions on March 23 and 24.

Major Schley, in an address before the Congress, stressed the national defense aspects of the country's waterway program. "We cannot tell," he said, "when we shall be engaged in armed conflict again. We do not know whether our efforts to preserve the nation in the next war will be restricted to the continental limits of the country. But we do know that a sound program demands that we be ready to meet any eventuality. Whether or not the theater of operations includes our shores, the entire nation will be engaged in the service of supply. And no supply system can function without proper communications."

"The communications network will require properly equipped and well distributed termini. This means inland and coastwise harbors with adequate depths, and transfer and terminal facilities. If we were required to rely on a few termini only, our traffic would clog and all operations would be delayed. Should a few coastwise harbors fall into hostile hands, our defense would suffer greatly unless we had other satisfactory harbors."

"Our internal networks of communications systems must be complete and inde-

pendent, yet interlocking. Railroads, highways, and waterways—each integral and supplementary. We saw in 1918 that available rolling stock of the railroads was wholly inadequate to meet our internal transportation requirements. All existing water carriers were pressed into service and additional ones were built."

Major Schley went on to say that he could see "untold value to our defense in a well developed waterway system adequately protected from flood danger" and assured his hearers that the Corps of Army Engineers stands ready to undertake any projects that may be desired by the country.

"Coronation Scot" Fraternizes with "Capitol Limited"

Inaugurating the exhibition tour of the "Coronation Scot," the latest streamline train of the British London, Midland & Scottish, which will include the itinerary of 3,121 miles and exhibitions in 38 cities of eastern and central United States, the Baltimore & Ohio, on behalf of the L. M. S., was host to a group of railway officers and representatives of the press on Saturday, March 18. The party traveled in the Coronation Scot between Baltimore, Md., and Washington, D. C., and between Washington and Point of Rocks, Md., during which numerous opportunities were afforded for photographing the British train, standing and in motion.

Following luncheon at the Union Station, Washington, the Coronation Scot was exhibited alongside the streamline steam locomotive of the B. & O. "Royal Blue," the Diesel-electric locomotive of the "Capitol Limited," and a Pennsylvania GG1 electric locomotive. For the purposes of sound moving pictures, as well as for still photography, the Capitol Limited locomotive and cars were operated alongside the Coronation Scot at various points on the line and standing on the Relay viaduct.

During the day's run the locomotive was in charge of James Carswell, the L. M. S. fireman, owing to the illness of F. C. Bishop, the engineman. Mr. Carswell's place as fireman was taken over by R. A. Riddles, the L. M. S. mechanical and electrical engineer.

While at Washington, Sir Ronald Lindsay, the British ambassador, was conducted through the train by Col. K. R. N. Speir,



New York Central photo

The Coronation Scot at Washington, D. C.—From Left to Right: The London, Midland & Scottish Streamline Locomotive; the Streamline Steam Locomotive of the Baltimore & Ohio Royal Blue; the Diesel-electric Locomotive of the Baltimore & Ohio Capitol Limited; and a Pennsylvania GG1 Electric Locomotive

Continued on next left-hand page

LIMA POWER AT WORK



High Speed Passenger Transportation at Minimum Cost

Streamlined steam locomotives designed on Super-power principles, provide safety, high speed, comfort, hauling capacity, flexibility of train operation and low cost.

Lima-built locomotives are meeting all the requirements of high speed passenger service in a manner superior to any other source of power.

LIMA LOCOMOTIVE WORKS,



INCORPORATED, LIMA, OHIO

continental traffic officer of the L. M. S., who is in charge of the tour.

The public exhibition tour, the itinerary of which was printed on page 282 of the February 11 issue of the *Railway Age*, began on Tuesday, March 21, at Baltimore. It will continue west as far as Chicago and will terminate at New Haven, Conn., on April 14, after which the train will be moved to its berth on the exhibit tracks at the New York World's Fair Grounds.

Equipment and Supplies

LOCOMOTIVES

THE UNITED STATES NAVY DEPARTMENT is asking for bids on April 11 for four steam oil burning locomotives, one steam fireless locomotive, one gasoline electric locomotive and fourteen Diesel electric locomotives, varying in weight from 40 to 60 tons, for service at the various navy yards.

FREIGHT CARS

THE LEHIGH VALLEY has ordered 500 hopper cars of 50 tons' capacity from the Bethlehem Steel Company.

THE DENVER & RIO GRANDE WESTERN is inquiring for 100 light-weight steel underframes for 40-ton, 40-ft. 1½-in. long stock cars. This is in addition to its inquiry for 600 cars reported in the *Railway Age* of March 18, page 505.

THE INTERSTATE COMMERCE COMMISSION, by Commissioner McManamy, has authorized the Union Tank Car Company to construct 100 fusion-welded tank cars for experimental service in the transportation of petroleum products. The report reveals that the commission has previously authorized the construction of a total of 607 such cars for experimental transportation of dangerous articles other than explosives.

IRON AND STEEL

THE ATCHISON, TOPEKA & SANTA FE is expected to place its 1939 rail requirements within a few days.

NEW YORK, CHICAGO & ST. LOUIS.—The directors of this road have authorized the purchase of 2,400 tons of 112-lb. and 1,600 tons of 100-lb. rails.

SIGNALING

NORTH CAROLINA.—Sealed proposals will be received by the North Carolina State Highway and Public Works Commission in the office of William L. Craven, bridge engineer, Raleigh, North Carolina until 10:00 a. m., April 11, for the installation of four flashing light signals on the Norfolk Southern.

Supply Trade

W. H. Kreer, representative for the Middle West for **Templeton Kenly & Company**, Chicago, has been appointed sales engineer.

Leo F. Hunderup, assistant general manager of the **Van Norman Machine Tool Company**, Springfield, Mass., has been elected a vice-president of the company.

William L. Stancliffe has been appointed manager of miscellaneous sales for the **American Car & Foundry Co.**, New York, and **Lester P. Philp** has been appointed assistant to the comptroller.

E. W. Cashman, service manager of the **Graybar Electric Company**, has been appointed general service manager, with headquarters at New York. **E. E. Martin**, assistant sales manager, has been appointed service manager and **E. A. McGrath**, has been appointed assistant service manager, at New York.

Harvey B. Jordan, who has been promoted to vice-president in charge of operations of the **American Steel & Wire**



Harvey B. Jordan

Company, Cleveland, Ohio, as was announced in the *Railway Age* of March 18, on page 505, was born at Lansing, Mich., on July 21, 1895, and attended Pennsylvania State College. He was first employed by the American Steel & Wire Company during the summer vacation of 1914 as a chemist at the central furnaces and docks in Cleveland. In June, 1915, he was placed permanently with the company, being employed as clean-up foreman at the same plant. He held the positions of first general foreman and then assistant superintendent, and was made superintendent of the plant in April, 1929. In May, 1933, he was transferred to the vice-president's office, where he did field work, and in February of the following year he was promoted to the managership of the metallurgical department, which position he held until being made manager of the Cleveland district in December, 1935. In January, 1937, he was promoted to assistant vice-president.

Financial

ATLANTIC COAST LINE.—*New Director.*—Daniel C. Roper, recently-resigned Secretary of Commerce, has been elected a director of this railroad, to succeed the late Norman James.

BROWNSVILLE & MATAMOROS BRIDGE.—*Notes.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue \$200,000 of 10-year unsecured noninterest bearing promissory notes, to be delivered in equal proportions to the applicant's proprietary companies (the St. Louis, Brownsville & Mexico and the National Railways of Mexico) in partial satisfaction of indebtedness due them.

CENTRAL OF NEW JERSEY.—*Default of Bond Interest.*—E. W. Scheer, president of this road, announced on March 17 that the quarterly installment of interest, due April 1, 1939, on registered general mortgage bonds of the road will not be paid on that date, citing as causes of the default the drastic decline in operating revenues resulting from the general business depression and slackness in the anthracite industry, upon which the company is dependent for a large amount of its traffic; on increases in the cost of operation; and extraordinary high property (state and local) taxes in the state of New Jersey. At the same time he indicated that the possibility of a voluntary adjustment of the company's fixed charges is now under discussion with a group of holders of large amounts of general mortgage bonds. The company is of the opinion "that it is preferable to attempt such a voluntary adjustment rather than to subject the situation to the delays and expenses of court reorganization, with the realization, however, that no such voluntary adjustment can be effective in the absence of a substantial tax reduction."

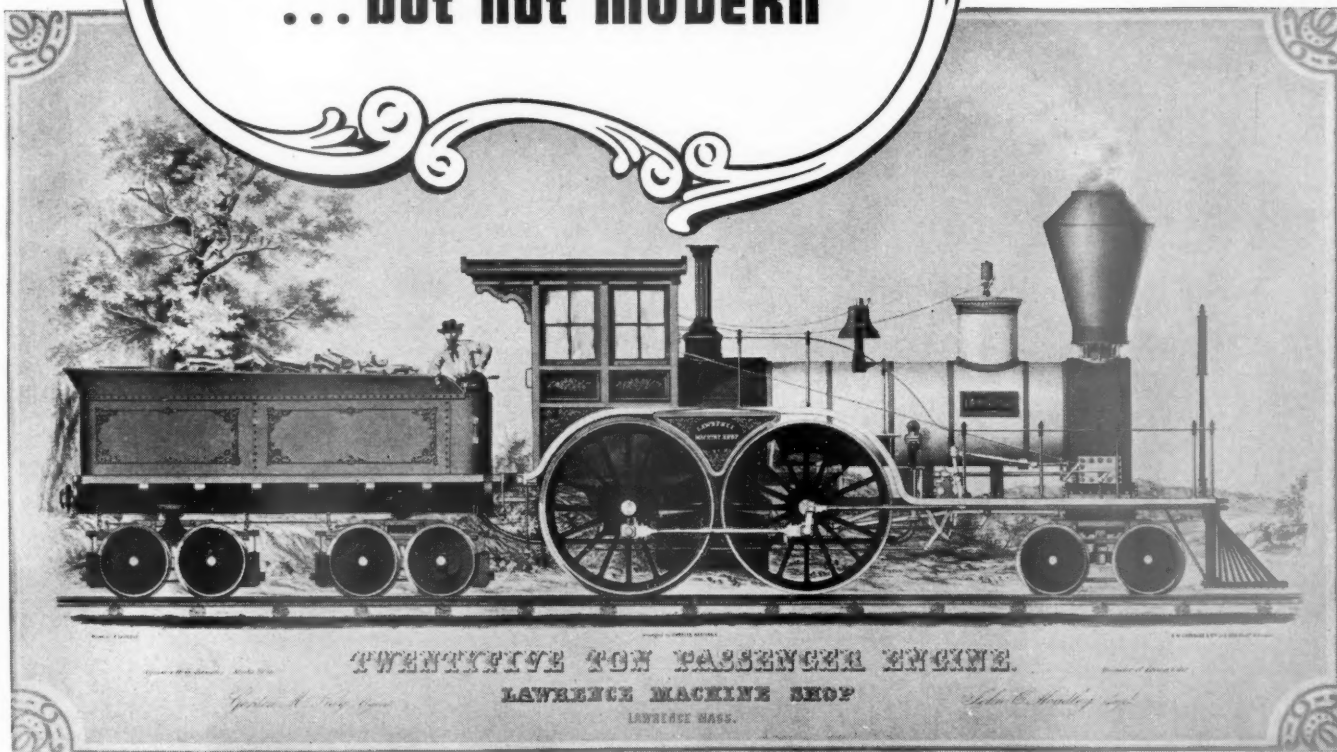
Mr. Scheer reported that the road has failed by a very large margin to earn its fixed charges in each of the years 1932 to 1938, both inclusive. The deficit after fixed charges in 1938 amounted to \$4,264,825, and the total deficit for the above period has aggregated \$17,351,081.

With respect to state and local taxes, it was pointed out that the company has paid for the years 1932-1938, both inclusive, \$15,227,494, or 56.6 per cent of its total assessments. It has withheld the remaining amount of \$11,674,143, which it has contested, together with certain of the other railroad companies operating in the state. In addition to state property taxes, the road has also been contesting local assessments, of which an aggregate of \$4,065,855 has been paid and \$2,339,360 withheld. Mr. Scheer declared further: "It is clear that in the absence of a substantial reduction of its tax burden and a material adjustment of its fixed charges, the company cannot avoid court reorganization." Then referring to a decision of the United States Supreme Court on March 13 denying the company's application for a review of adverse decisions of lower federal courts in respect to New Jersey taxes for 1932-1933, he went on to say that

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PICTURESQUE...

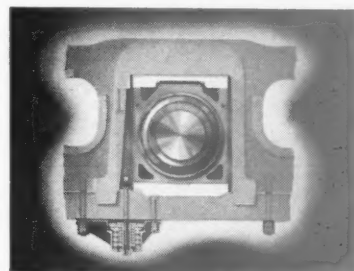
... but not MODERN



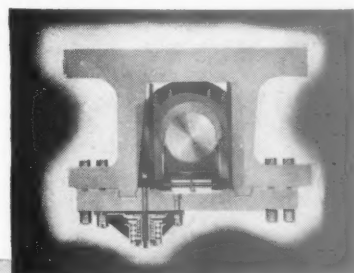
Neither is hand adjustment of driving box wedges modern or necessary. Differences in driving box temperatures of as much as 250° within short periods of time make necessary the adjustment of wedges with each turn of the wheel. Be *modern* about your wedge adjustment, install Franklin Automatic Compensators & Snubbers and be sure of a constant control of the air gap, which is the clearance provided between the box and the shoes when the box is cold. This is especially important on Roller Bearing Boxes where tolerances are limited, and protection of the bearings must be maintained.



No locomotive device is better than the replacement part used for maintenance. Genuine Franklin repair parts assure accuracy of fit and reliability of performance.



ABOVE: Franklin Automatic Compensator and Snubber for Roller Bearing Driving Box application. BELOW: Franklin Automatic Compensator and Snubber for Friction Bearing Driving Box application.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK

CHICAGO

MONTREAL

should the state of New Jersey attempt to collect the assessed but unpaid taxes for 1932-1933 "the company would have no recourse but to seek the protection of the courts."

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Equipment Trust Certificates.—This road has awarded \$1,920,000 of 3 per cent equipment trust certificates, Series T, to the Northwestern Mutual Life Insurance Company on a bid of 100.50. The certificates will mature on April 1, 1940 to 1954.

FLORIDA EAST COAST.—Hearing on receivership.—The federal district court at Jacksonville, Fla., has named April 14 for a hearing of interested parties with respect to the financial future of this road. The court order points out that the line has been in receivership since 1931 and that no plan of reorganization or other disposition has yet been proposed. Hence it asks that parties in interest declare whether they desire immediate reorganization, sale of the property or continuance of the receivership.

LEHIGH VALLEY.—Plan of Interest and Maturities Modification.—A plan whereby interest and maturity provisions of certain security issues of this road are to be modified was reported in last week's issue as having been declared operative effective March 15. It was further stated that as of the close of March 14, holders of 84.7 per cent of the total of \$105,836,000 of securities affected had submitted their bonds and notes for stamping as assented. March 22 was the last date on which dissents to the plan could be placed on record.

As was summarized in the *Railway Age* of August 27, 1938, page 337, the plan pertains chiefly to interest coupons of the road's general consolidated mortgage bonds; maturity dates of Pennsylvania & New York Canal & Railroad consolidated, due April 1, 1939; Lehigh Valley Rail Way first mortgages, due July 1, 1940, and Lehigh Valley Terminal Railway first mortgages, due October 1, 1941; and fixed principal payments on bank and R. F. C. loans. The plan as approved provides for the extension, without interest, of 75 per cent of each of the five semi-annual interest installments of \$1,558,463 each on the general mortgage bonds for a five-year period beginning with November 1, 1938. The maturity dates of the remaining three issues would each be extended for a period of ten years. Regular interest coupons thereof would continue to be paid during the period of extension, payable semi-annually. Fixed payments on bank and R. F. C. loans would be reduced to \$511,000 for each of the years 1939 to 1942, inclusive, with the remainder payable in 1943.

Since the provisions of the mortgages covering all four issues are inadequate to permit releases therefrom to permit abandonments of uneconomic properties, the plan calls for appropriate supplemental indentures permitting sale of properties no longer needed in operations, provided the proceeds be deposited with the trustee of each mortgage issue or an equivalent amount of capital expenditures made during or after the year in which the release occurs.

The plan is being administered by a committee of four Lehigh Valley directors and a group of five representatives of institutional bondholders comprising the Metropolitan Life Insurance Company, the Penn Mutual Life Insurance Company, the Fidelity-Philadelphia Trust Company, the Philadelphia Saving Fund Society and the Mutual Life Insurance Company of New York. It shall be deemed to be abandoned, without further action, should a petition be filed for reorganization under Section 77 or if a receiver be appointed. As for non-assenting bonds, the company and the committee administering the plan intend that such securities "shall receive no better treatment than assenting bonds as to payment of interest or otherwise" and, if necessary, the company will invoke legal proceedings to effectuate the plan and insure equality of treatment to all bondholders.

The Lehigh Valley operates 1,288 route-miles in New York, New Jersey and Pennsylvania. A total of \$142,627,000 principal amount of funded debt, including that of subsidiaries, is in the hands of the public. In addition, the company has outstanding bank loans of \$8,375,000, a total of \$1,889,000 principal amount of R. F. C. loans and \$1,110,532 of conditional sale obligations.

NORFOLK & PORTSMOUTH BELT LINE.—Notes.—This company has been authorized by Division 4 of the Interstate Commerce Commission to issue at par a promissory note or notes in the aggregate face amount of \$700,000, the proceeds to be applied to the payment at maturity on April 1, of a like amount of promissory notes.

PENNSYLVANIA.—Abandonment by the Pennsylvania, Ohio & Detroit.—The Pennsylvania, Ohio & Detroit has asked the Interstate Commerce Commission for authority to abandon the line and the Pennsylvania has asked for authority to abandon operation of that part of the line known as the Walhonding branch extending from Loudonville, Ohio, to Brink Haven, 17 miles.

PORTLAND & RUMFORD FALLS.—Notes.—At the request of this company, Division 4 of the Interstate Commerce Commission has modified its order of February 3, 1937, so as to limit the amount of notes that may be issued thereunder to \$100,000. The original order had authorized \$237,500, but the company informed the commission that only \$100,000 had been issued and that no more were contemplated.

WESTERN MARYLAND.—Abandonment.—This company has asked the Interstate Commerce Commission for authority to abandon a line extending from Narrows Park, Md., to Midland, 13.3 miles.

Average Prices of Stocks and Bonds

	Mar. 21	Last week	Last year
Average price of 20 representative railway stocks..	30.68	33.28	23.36
Average price of 20 representative railway bonds..	62.26	64.02	57.46

Dividends Declared

Carolina, Clinchfield & Ohio.—\$1.25, quarterly, payable April 20 to holders of record April 10.
Virginian.—\$2.00, payable March 28 to holders of record March 18; Preferred, \$1.50, quarterly, payable May 1 to holders of record April 12.

Railway Officers

EXECUTIVE

J. W. Davin, assistant to the president of the Chesapeake & Ohio, and the Pere Marquette, with headquarters at Cleveland, Ohio and Huntington, W. Va., and **H. P. Henshaw**, assistant vice-president of the C. & O. and the Pere Marquette, with headquarters at Huntington, have



J. W. Davin

been elected vice-presidents of the Chesapeake & Ohio, with the same headquarters.

Mr. Davin was born in Montgomery, W. Va., on March 10, 1892, and attended a branch school of the University of West Virginia. He entered railway service on December 27, 1910, as a check clerk at Handley, W. Va., and the following year he became yard clerk and later chief clerk to the general yardmaster. In 1913, he was appointed night car distributor for the Kanawha Coal district and in 1914 he was promoted to car distributor at Handley. In 1916, he was advanced to assistant chief car distributor for all the coal fields, with headquarters at Huntington, and later that year he was promoted to chief car distributor. Mr. Davin left the C. & O. in 1919 to become traffic manager of the Amherst Fuel Company at Lundale, W. Va., but returned to the railway in 1920 as chairman of the allotment commission. Three years later he was advanced to assistant superintendent of transportation and in 1913 he was promoted to assistant general superintendent of transportation, with headquarters at Huntington, W. Va. On December 1, 1933, he was further advanced to assistant to the president and in 1937 he was appointed also vice-president of the Western Pocahontas Corporation and the Western Pocahontas Fuel Company, with headquarters in Cleveland.

Mr. Henshaw was born near Bunker Hill, W. Va., on December 21, 1886, and was graduated from Shenandoah Valley Military Academy at Winchester, Va., in 1907. In 1907, he enrolled in the West Virginia University school of engineering. In June, 1908, Mr. Henshaw obtained a position with the United States Geodetic Survey. From 1918 to 1924 he was a

Continued on next left-hand page

NO. 85 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



TARADALE VIADUCT

AUSTRALIA

This viaduct, which is on the Melbourne-Bendigo Line of the Victorian Government Railways, was built in 1862, of wrought iron. Built originally of five 130 ft. spans it consists of four continuous box girders 10 ft. deep. Its 650 ft. length rests on four masonry piers of 2,000 tons each, and five intermediate steel towers that were added in 1933 for re-inforcement. The maximum

height from the floor of the valley to rail level is 112 ft.

* * * * *

The Security Sectional Arch is today an essential factor in modern steam transportation. But only when every brick is in place can you realize its true efficiency.

* * * * *

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

60 EAST 42nd STREET, NEW YORK, N. Y.

*Locomotive Combustion
Specialists*

member of the sales organization of the fertilizer department of Swift & Company, from which he resigned to go with the



H. P. Henshaw

Washington Alexander & Cook Co., a subsidiary of the Virginia-Carolina Chemical Company. Mr. Henshaw was elected to the West Virginia house of delegates from Berkeley County, W. Va., in 1916. In 1920, he was elected to the state senate from the Fifteenth district and was twice re-elected. From 1931 to March, 1933, he was a member of the West Virginia road commission and in September, 1933, he became secretary of the West Virginia Railway Association. In January, 1936, he was appointed assistant to the vice-president of the C. & O. in charge of public relations and state taxation, with headquarters at Huntington, W. Va. Mr. Henshaw was advanced to assistant vice-president of the C. & O. and the Pere Marquette and also assistant vice-president of the Western Pocahontas Corporation and Western Pocahontas Fuel Company in October, 1937.

FINANCIAL, LEGAL AND ACCOUNTING

Robert B. Tunstall, general counsel of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio and Richmond, Va., has been appointed also general counsel of



Robert B. Tunstall

the New York, Chicago & St. Louis (Nickel Plate) with the same headquar-

ters. Mr. Tunstall was born in New York on February 9, 1880 and graduated in law from the University of Virginia in 1902. From that year until 1927, he engaged in the general practice of law at Norfolk, Va., including service as division counsel for the Southern in Virginia. During the period from 1920-27 he acted as general solicitor in charge of federal valuation of the Virginian. On May 16, 1927, Mr. Tunstall went with the C. & O. as assistant general counsel, and on September 17, 1935, he was promoted to general counsel. He has been active in the affairs of civic, educational and professional societies, being a past president of the Virginia State Bar Association and a former vice-president of the American Bar Association.

George J. Cady, traveling freight claim agent on the Illinois Central, with headquarters at Chicago, has been promoted to assistant freight claim agent with the same headquarters, replacing **Martin V. Nugent**, deceased.

OPERATING

R. Taggart has been appointed supervisor of station service on the Washington division of the Union Pacific, with headquarters at Spokane, Wash.

C. W. Campbell, district engineer of the Northwestern and North Texas districts of the Missouri-Kansas-Texas, with headquarters at Denison, Tex., has been promoted to superintendent of the Northwestern district, with headquarters at Wichita Falls, Tex., succeeding **D. C. Dobbins**, resigned.

James P. Downey, chief clerk in the president's office, Railway Express Agency, at New York, has been appointed superintendent of the Susquehanna division, with headquarters at Scranton, Pa., to succeed **J. J. McDermott**, who has been transferred to New York as superintendent of the Office division.

Floyd R. Mays, general superintendent of equipment of the Illinois Central, with headquarters at Chicago, has been promoted to general manager with the same headquarters, and **William Atwill**, vice-president and general manager, will continue as vice-president in charge of operation, with headquarters as before in Chicago.

C. P. Cahill, superintendent of the Kansas division of the Union Pacific, with headquarters at Kansas City, Mo., has been appointed acting general superintendent of the Eastern district, with headquarters at Omaha, Neb., a newly-created position, and **George H. Warfel**, assistant superintendent of the Eastern division, with headquarters at North Platte, Neb., has been appointed acting superintendent at Kansas City succeeding Mr. Cahill. **F. P. Flesher**, trainmaster at Cheyenne, Wyo., has been promoted to assistant superintendent at North Platte, replacing Mr. Warfel and **R. T. McMullen**, conductor in train service at Omaha, has been advanced to trainmaster at Cheyenne, relieving Mr. Flesher.

F. H. Hibbard has been appointed superintendent and chief engineer of the Quebec Central, with headquarters at Sherbrooke, Que., as noted in the *Railway Age* of March 11. Mr. Hibbard was born on August 9, 1888, at Ottawa, Ont., and entered railway service with the Transcontinental (now C. N. R.) in 1907, during construction. The following year he was appointed assistant engineer on construction of the Quebec Terminals. In 1911 he was promoted to resident engineer at Quebec and on completion of the work there in 1913 was appointed to the engineering staff of the Canadian Pacific and Lake Erie & Northern in Ontario. Mr. Hibbard entered the employ of the Quebec Central later in the same year as engineer in charge of construction of the Chaudiere and Scotts extensions. He was promoted to engineer maintenance of way in 1924 and to chief engineer in 1931, his jurisdiction



F. H. Hibbard

now being extended to embrace the operating and mechanical departments with the title of superintendent and chief engineer.

TRAFFIC

F. A. Fox has been reappointed general agent on the Union Pacific at Sacramento, Cal., succeeding **V. J. Christensen**, acting general agent.

W. H. H. Terrell, commercial agent for the Seaboard Air Line at Chicago, has been appointed western freight agent with the same headquarters.

H. L. Van Amburgh has been appointed traffic manager of the South Omaha Terminal and the Union Stock Yards of Omaha, Neb.

R. J. Foreman, traffic manager of the foreign freight department of the Canadian National, with headquarters at Montreal, Que., has been appointed general freight traffic manager, with the same headquarters, succeeding **R. W. Long**, who has retired on pension after more than 50 years association with the constituent companies of the Canadian National.

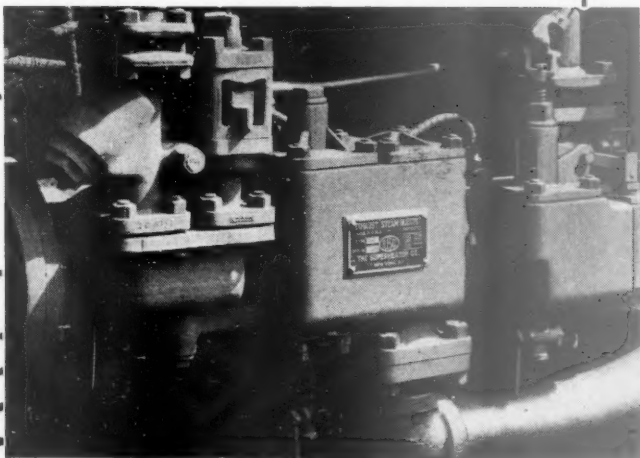
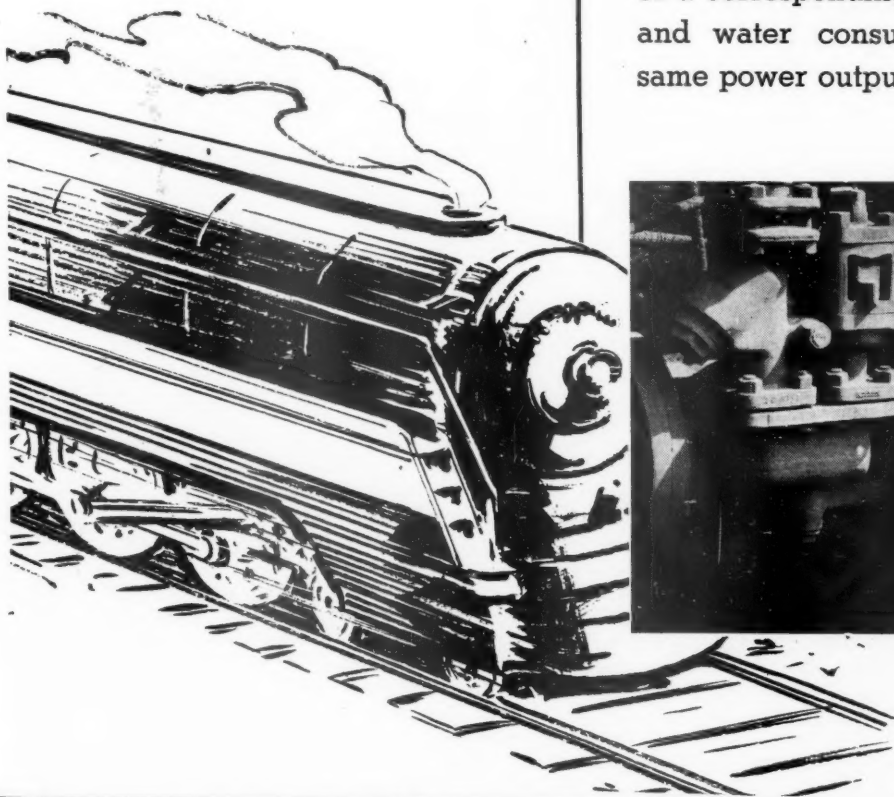
G. F. Garland, general agent of perishable freight traffic on the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to manager of

Stability of Operation

—An Operating Feature of the Elesco Exhaust Steam Injector

The Elesco exhaust steam injector automatically admits the maximum amount of exhaust steam that can be completely condensed by the suction water . . . this means stability of operation and better operating performance.

Through the utilization of waste exhaust steam, the Elesco exhaust steam injector is responsible for an 8%-12% increase in boiler capacity, or a corresponding decrease in fuel and water consumption with the same power output.



A-1319

THE SUPERHEATER COMPANY

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perishable freight traffic, with the same headquarters, succeeding **W. C. Fitch**, whose promotion to freight claim agent is noted elsewhere in this issue, and **J. W. Condon** has been appointed general agent of perishable freight traffic replacing Mr. Garland.

J. F. Dolard, division freight agent on the Missouri-Kansas-Texas, with headquarters at San Antonio, Tex., has been promoted to assistant general freight and passenger agent, with the same headquarters, a newly created position.

ENGINEERING AND SIGNALING

E. A. Craft, engineer of maintenance of way of the Southern Pacific Lines in Texas & Louisiana, with headquarters at Houston, Tex., has been promoted to assistant to the executive vice-president, with the same headquarters, succeeding **L. H. Cecil**, whose death on January 26 was announced in the *Railway Age* of February 11, and **H. J. McKenzie**, chief draftsman at Houston, has been promoted to assistant to chief engineer, with the same headquarters, a newly created position. The position of engineer maintenance of way has been abolished.

Mr. Craft was born at Danville, Ill., on September 11, 1893, and entered railway service in October, 1909, as a chairman on the Chicago & Eastern Illinois. He was later promoted to transitman and in 1914,



E. A. Craft

he was advanced to assistant division engineer on the Evansville division, later being transferred successively to the Illinois and the Chicago divisions. In June, 1917, he was commissioned first lieutenant in the Engineer's Officers Reserve Corps assigned with the 17th Engineers (Railway) at St. Nazaire, France. Mr. Craft was transferred to the Transportation Corps on November 1, 1917, and from January 1, 1918 to August, 1919, was a superintendent in the army transport service, receiving a commission as captain in October, 1918, and as major in February, 1919. He returned to the C. & E. I. as assistant engineer at Danville in October, 1919. In December, 1919 he went with the Southern Pacific as division engineer of the El Paso division, with headquarters at El Paso,

Tex., and four months later he was appointed assistant to the engineer maintenance of way, with headquarters at Houston, Tex. In September, 1920, he was appointed assistant to the chief engineer. Mr. Craft was advanced to engineer maintenance of way in October, 1926, holding that position until his recent appointment which was effective on March 16.

A biographical sketch of the railway career of **Timothy G. Sughrue** was published in the *Railway Age* of February 25, in connection with his appointment as engi-



Timothy G. Sughrue

neer maintenance of way of the Maine Central system and the Portland terminal company, with headquarters at Portland, Me.

Wesley C. Brown, assistant engineer on the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., has been promoted to district engineer of the Northwestern and North Texas districts, with headquarters at Denison, Tex., replacing **C. W. Campbell**, whose promotion to superintendent of the Northwestern district is announced elsewhere in this issue.

MECHANICAL

G. C. Christy, superintendent of motive power of the Illinois Central, has been promoted to general superintendent of equipment, with headquarters as before at Chicago, succeeding **Floyd R. Mays**, whose promotion to general manager is announced elsewhere in this issue.

A. B. Wilson, master mechanic of the Coast division of the Southern Pacific, with headquarters at Bayshore, Cal., has been promoted to assistant superintendent of motive power, with headquarters at the Sacramento general shops, Sacramento, Cal., a newly created position, and **S. M. Houston**, master mechanic of the Western division, with headquarters at West Oakland, Cal., has been promoted to assistant superintendent of motive power, with headquarters at the Los Angeles general shops, Los Angeles, Cal., also a newly created position. **L. T. Fife**, master mechanic of the San Joaquin division, with headquarters at Bakersfield, Cal., has been transferred to Bayshore, relieving Mr. Wilson and **E.**

E. Hinchman, assistant master mechanic at West Oakland, has been promoted to master mechanic, with headquarters at Bakersfield, replacing Mr. Fife. **L. A. Mitchell**, master mechanic of the Western division, with headquarters at West Alameda, Cal., has been transferred to West Oakland, succeeding Mr. Houston and **R. E. Harrison** has been appointed master mechanic at West Alameda replacing Mr. Mitchell. **E. R. Anton** has been appointed assistant master mechanic at West Oakland relieving Mr. Hinchman.

PURCHASES AND STORES

I. G. Trudel, storekeeper of the general stores of the Canadian Pacific at Winnipeg, Man., has been promoted to district storekeeper of the Alberta and British Columbia districts, with headquarters at Calgary, Alta., succeeding **W. J. Coe**, who has retired.

SPECIAL

Clarence R. Dugan has been appointed manager, public relations, of the New York Central, with headquarters at New York, as noted in the *Railway Age* of March 11. Mr. Dugan was born on August 7, 1886, at Springfield, Ohio, and entered railroad service in September, 1901, as stenographer in the engineering department of the New York Central. In July, 1905, he was appointed secretary to general counsel, becoming assistant to vice-president and general



Clarence R. Dugan

counsel in July, 1918. He was appointed assistant to vice-president, finance and corporate relations in March, 1920.

OBITUARY

Edward J. Coady, treasurer and assistant secretary of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo., died on March 16 at his home in that city after a month's illness.

Daniel C. Rounseville, retired assistant chief engineer of the Chicago & North Western, whose death at Oak Park, Ill., on February 28, was announced in the (Continued on page 548)

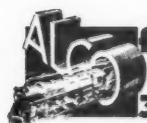


Fifteen More

The Union Pacific has recently placed an order with the American Locomotive Company for fifteen (15) 4-8-4 type locomotives.

These new locomotives are very similar to the twenty (20) 4-8-4 type locomotives built by the American Locomotive Company in 1937 to handle the "Challenger"—the Union Pacific all Coach-Pullman Tourist Sleeping Car Train running between Chicago and Los Angeles.

On the new locomotives the diameter of driving wheels has been increased to 80 inches, the diameter of cylinders to 25 inches, and the water capacity of the tender to 23,500 gallons.



AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET • NEW YORK • N.Y.

ANNUAL REPORT OF PULLMAN INCORPORATED AND ALL SUBSIDIARIES For Fiscal Year 1938

March 17, 1939

CONSOLIDATED BALANCE SHEET DECEMBER 31, 1938 AND 1937

ASSETS		1938	1937
CURRENT ASSETS:			
Cash		\$ 32,061,600.81	\$ 28,369,471.20
U. S. Government Securities (1938—Market Value \$18,900,524.70)		17,231,377.22	16,724,509.01
Accounts and Notes Receivable		6,380,440.35	9,082,432.43
Equipment Trust and Other Deferred-Payment Car Accounts		6,128,427.39	7,573,779.00
Marketable Securities (1938—Market Value \$1,689,215.77)		1,863,768.26	2,318,433.47
Inventories at Cost—			
Carrier Subsidiary		\$ 7,360,352.42	\$ 8,124,937.36
Manufacturing Subsidiaries		3,294,476.80	10,686,198.05
Total Inventories		\$ 10,654,829.22	\$ 18,811,135.41
		\$ 74,320,443.25	\$ 82,879,760.52
INVESTMENT IN AND ADVANCES TO AFFILIATED COMPANIES AT COST			
		3,484,300.00	3,484,300.00
OTHER SECURITIES, INVESTMENTS AND CLAIMS AT COST			
		2,759,210.22	475,327.88
SPECIAL DEPOSITS WITH VARIOUS STATES UNDER COMPENSATION ACTS			
		293,454.20	193,785.14
RESERVE FUND ASSETS:			
U. S. Government Securities held to fund Pension and Fire Insurance Reserves		5,891,780.69	5,554,675.49
		404,146.60	445,370.35
		\$ 87,153,334.96	\$ 93,033,219.38
DEFERRED CHARGES			
		\$ 87,153,334.96	\$ 93,033,219.38
EQUIPMENT AND PROPERTY:			
Balance, beginning of Year		\$366,696,627.96	\$370,691,678.38
Additions during Year		13,956,325.98	8,830,172.96
		\$380,652,953.94	\$379,521,851.34
Less: Retirements during Year		10,695,077.01	12,825,223.38
		\$369,957,876.93	\$366,696,627.96
DEDUCT			
Depreciation Reserves:			
Balance, beginning of Year		\$196,077,189.34	\$192,334,119.35
Additions during Year		12,442,437.35	12,182,751.77
		\$208,519,626.69	\$204,516,871.12
Less: Charges on Account of Retirements during Year		6,172,546.94	8,439,681.78
		\$202,347,079.75	\$196,077,189.34
Balance, end of Year, less Depreciation Reserves		\$167,610,797.18	\$170,619,438.62
		\$254,764,132.14	\$263,652,658.00
LIABILITIES			
CURRENT LIABILITIES:			
Current Accounts Payable and Payrolls		\$ 4,861,212.00	\$ 8,258,044.67
Accrued Taxes, not yet due, including Provision for Federal Income and 1937 Undistributed Profits Taxes		5,287,908.70	7,082,524.34
		\$ 10,149,120.70	\$ 15,340,569.01
RESERVES:			
Pension and Fire Insurance Reserves		\$ 5,960,596.25	\$ 5,746,134.85
Reserve for Contingencies		3,761,715.84	3,350,000.00
Other Reserves		3,958,940.64	3,204,229.28
		\$ 13,681,252.73	\$ 12,300,364.13
DEFERRED CREDITS:			
Air Conditioning Revenue Deferred		\$ 2,218,053.93	
Other Deferred Credits		2,404,050.04	3,087,718.78
		\$ 4,622,103.97	\$ 3,087,718.78
CAPITAL STOCK:			
Pullman Incorporated—no par value—			
Authorized	1938	1937	
	3,875,000	3,875,000	
Unissued	448	448	
Issued—			
At stated value of \$50 per share	3,874,552	3,874,552	\$193,727,600.00
Reacquired—			
(In Treasury) at stated value of \$50 per share	54,363	54,363	2,718,150.00
Outstanding—			
At stated value of \$50 per share	3,820,189	3,820,189	\$191,009,450.00
The Pullman Company—			
(a subsidiary)			
Outstanding—			
At par value of \$100 per share	67,279	67,279	6,727.90
			\$191,016,177.90
SURPLUS:			
Excess of value of property acquired by issue of shares of capital stock over the stated value of \$50 per share, less subsequent write-downs on said property out of this surplus as authorized by the Board of Directors			\$ 83,384,902.55
Net profits earned since April 30, 1927 (date of re- organization)			80,417,760.52
			\$163,802,663.07
Dividends paid during the period from April 30, 1927 to date			128,507,186.23
			\$ 35,295,476.84
Balance, at December 31			\$254,764,132.14

To STOCKHOLDERS:

* * *

Earnings

Consolidated Income Account shows a net earning of \$2,295,-829.16 (\$0.59 per share) in 1938 after all charges and taxes, which is about one-fifth of the earning of \$12,275,950.03 (\$3.17 per share) in 1937.

The 1938 results, prior to provision for Federal income taxes, from operations in the three major lines of business activity conducted by the Corporation and its subsidiaries were as follows:

In the sleeping car business an earning of \$2,504,266.62 (after withholding out of air conditioning revenue \$2,218,053.93 as a deferred credit applying to future operations) compared with \$5,650,927.43 in 1937, in which year there was included a non-recurring credit of \$799,774.54 from remission of 1936 tax accruals under the superseded Railroad Retirement Act of 1935.

In the manufacturing business an earning of \$239,-933.38 compared with \$9,059,115.06 in 1937, reflecting the severe shrinkage in car orders in 1938.

Earning of \$862,922.99 from security investments, after provision for administrative expense of the parent company, advanced \$305,236.46 over 1937, the result principally of an increase in income from Government and Other Securities during the year, plus some profit from sale or redemption of miscellaneous securities.

Financial Condition

The Consolidated Balance Sheet as of December 31, 1938, showed Net Working Capital of \$64,171,322.55 as compared with \$67,539,191.51 at the end of the previous year. The total of Cash and Government securities (exclusive of those held in reserve funds) as of December 31, 1938 was \$49,292,978.03.

The decrease of \$8,156,306.19 in total inventories is attributable primarily to the sharply reduced scale of operations in the manufacturing subsidiaries, where the unfilled orders at the end of 1938 were only about one-half the year-earlier volume. * * * Quantities and condition of materials on hand are checked at least once within the year by the auditing staff of the subsidiary companies, with later test check of the pricing and extensions by the certifying public accountants.

Sleeping Car Business

The contraction in Pullman travel engendered by the 1937 collapse in general business activity continued in 1938 and became more marked during the third quarter of the year as result of absence of the normal volume of Summer tourist travel and the failure of commercial travel, the backbone of the Pullman business, to respond in proportion to improvement in general business activity. However, the fourth quarter was characterized by a narrowing rate of decline that contrasted favorably with the sharp decreases registered in preceding months.

The rate increase of 5% allowed by the Interstate Commerce Commission and made effective August 1st failed to restore a normal margin between revenues and expenses, as the potential revenue-increase from the higher rates was nullified by the continuing slump in traffic volume, with result that Gross Revenue for the full year dropped 8% below 1937 and receded to the level obtaining in 1936.

* * *

A substantial number of new-type lightweight sleeping cars were placed in operation during the year in other train services both East and West. The response of the traveling public to the

new installations has been enthusiastic, and the heavy passenger loadings consistently obtained on the streamliners have yielded satisfactory financial results. Additional new-type lightweight Pullman equipment now in course of construction will be in operation on Eastern Trunk Lines by mid-1939. High speed betterments (described in some detail in the Annual Report for 1937) have been installed in several trains of standard Pullman cars recently remodeled for the New York-Florida and Chicago-Washington services, and now receiving increasing patronage from the traveling public.

Active preparations are being made by the Railroads and The Pullman Company for the handling of an increased volume of travel during the period of the New York and San Francisco Fairs. Maintenance outlay has been accelerated in recent months in order to place the active fleet of Pullman general service cars in first-class condition. Substantial reductions in the cost of Rail-Pullman transportation have been established for the duration of the Fairs, and should attract an increasing number of travelers to the unique comfort and safety advantages of Rail-Pullman passenger service.

Manufacturing Business

Reflecting the sharply restricted volume of equipment ordered by the Railroads during the past year-and-a-half, production and earning of the manufacturing subsidiaries were severely depressed in 1938. The total number of new freight cars ordered in 1938 from commercial carbuilders was substantially less than one-half of those ordered in 1937 and 1936, respectively, and, with exception of the depression years, was the smallest number for any year since 1900. Passenger car orders in 1938 were less than one-third of those ordered in 1937 and the smallest for any year since the 1931-1933 period. Manufacturing plants and organizations have been adequately maintained and are in good position to handle any increase in the demand for new equipment.

* * *

The Pullman-Standard manufacturing subsidiary has maintained active and effective participation in the development of new types of passenger train equipment, and in 1938 built 231 lightweight car units out of a total of 288 delivered in that year by all builders. Over 500 Pullman-built new-type passenger units are now in operation on the nation's railroads, in addition to over 200 lightweight Pullman sleeping cars, all of which are playing an important part in improving the competitive position of the rail passenger services.

Research

There has been continuous effort to improve the services and products supplied by the Corporation's subsidiary companies.

The folding type of berth bed adopted for use in the single occupancy section and furnishing a new and convenient dressing space arrangement, has been widely installed and has met with much public favor. Continued improvement in the quietness and smoothness of operation of the new lightweight sleeping cars is being obtained, with constant refinement in the detail of interior fittings and appointments.

The results of intensive investigation by Pullman engineers, supplemented by related experience of other research agencies, have determined the choice of carbuilding materials and processes used by Pullman in the construction of the new types of passenger equipment.

* * *

Extensive service use and experience with the most severe forms of collision damage have confirmed the soundness of the engineering practice applied in selection of the materials and designs employed in Pullman-built lightweight equipment. In a series of comparative tests of light and heavyweight passenger equipment conducted under the supervision of an authoritative Railroad engineering organization the Pullman-built lightweight car successfully complied with the basic strength requirements of the U. S. Railway Mail Service that have for years been the accepted standard for passenger car design. All of the Pullman-built lightweight passenger cars now in operation meet those requirements fully.

In the Annual Report for 1937 reference was made to a series

CONSOLIDATED SURPLUS ACCOUNT

YEARS ENDED DECEMBER 31, 1938 AND 1937

	1938	1937
BALANCE OF SURPLUS, as at January 1	\$41,907,828.18	\$39,958,334.17
Credit adjustment on account of reduction of Pension Reserve, The Pullman Company		3,542,080.06
Sundry credit adjustments on business of prior years		
Reserve for Depreciation—Linen prior to January 1, 1908	\$ 411,715.84	
Ticket Sales Balance prior to March 1, 1934	337,412.21	
Unclaimed Salaries prior to January 1, 1933	15,114.09	
Unclaimed Checks prior to January 1, 1933	3,653.49	
	767,895.63	
BALANCE OF EARNINGS from Income Account for year ended December 31	\$2,295,829.16	\$12,275,950.03
Adjustment on account of disposition of American Austin Car Co. mortgage		25,000.00
Adjustment arising from transactions in connection with acquisition of outstanding shares of The Pullman Company		260.13
	2,295,829.16	12,301,210.15
LESS:	\$44,971,552.97	\$55,801,586.58
Addition to Reserve for Contingencies	\$ 411,715.84	
Abandonment of manufacturing properties	458,978.65	1,880,494.14
Adjustment of revalued carrier property units retired	3,552,440.32	1,507,436.35
Dividends declared and paid	5,252,941.32	10,505,827.91
	9,676,076.13	13,893,758.40
BALANCE OF SURPLUS, as at December 31	\$35,295,476.84	\$41,907,828.18

CONSOLIDATED INCOME ACCOUNT

FOR THE YEARS ENDED DECEMBER 31, 1938 AND 1937

	1938	1937
EARNINGS:		
FROM CARRIER BUSINESS:		
Operating revenues	\$58,924,968.32	\$64,287,199.34
Operating expenses	\$46,271,145.60	\$48,854,614.91*
Provision for depreciation	10,149,556.10	9,781,657.00
Total	\$58,924,968.32	\$58,636,271.91
Net Operating Income	\$ 3,504,266.62	\$ 3,650,927.43
FROM MANUFACTURING BUSINESS:		
Net sales and operating revenues	\$33,102,137.05	\$72,261,847.44
Cost of goods sold and operating expenses	\$28,534,661.22	\$58,890,850.43
Provision for depreciation	2,292,881.25	2,401,094.77
Selling and administrative expenses	2,034,861.20	1,910,787.18
Total	\$32,862,203.67	\$65,203,732.38
Net Manufacturing Profit	\$ 239,933.38	\$ 9,058,115.06
	\$ 3,744,200.00	\$14,718,042.49
FROM SECURITY INVESTMENTS:		
Income from Securities, Profit on Securities sold, and Other Miscellaneous Income	\$ 1,100,351.07	\$ 872,756.89
Less: Balances in closed banks written off, interest paid, and miscellaneous income deductions	23,829.09	85,731.56
Administrative expense of Pullman Incorporated	213,598.99	229,338.80
Total	\$ 862,922.99	\$ 557,686.53
Net Investment Income	\$ 862,922.99	\$ 557,686.53
TOTAL EARNINGS FROM ALL SOURCES	\$ 3,607,122.99	\$15,267,729.02
Less: Provision for Federal Income Tax	\$ 1,311,293.83	2,655,183.75
Provision for Federal Surplus on Undistributed Profits		336,595.24
BALANCE OF EARNINGS CARRIED TO SURPLUS	\$ 2,295,829.16	\$12,275,950.03

*Includes credit of \$799,774.54 accruing from remission of 1935 taxes under Railroad Retirement Act of 1935.

THE PULLMAN COMPANY

TRAFFIC AND OPERATING STATISTICS

COMPARATIVE STATEMENT FOR YEARS ENDED DECEMBER 31

ITEM	1938	1937	1936	1935	1934
CARS OWNED	8,473	8,087	8,004	7,763	7,378
CARS OPERATED	5,009	5,017	5,355	5,500	5,124
CAR MILES	737,167,857	758,554,032	825,945,721	872,598,392	818,681,116
REVENUE PASSENGERS:					
Berth	10,258,642	10,624,818	12,049,339	12,949,076	11,318,471
Seat	4,846,707	4,853,890	5,148,777	4,895,492	4,201,378
TOTAL	15,105,349	15,478,708	17,197,736	17,744,568	15,519,849
REVENUE PASSENGER MILES	6,891,002,293	7,146,369,648	8,354,840,293	9,170,428,451	8,269,882,057
REVENUE FROM CARS	\$ 44,513,817	\$ 46,758,360	\$ 52,645,993	\$ 57,666,648	\$ 54,444,640
Average per Car	\$ 8,553.77	\$ 9,246.43	\$ 9,830.82	\$ 10,484.46	\$ 10,624.59
EXPENSES	\$ 44,124,174.6	\$ 44,805,241.6	\$ 49,191,772.6	\$ 53,447,531.6	\$ 52,941,643.6
Average per Car	\$ 8,774.29.6	\$ 9,572.12.6	\$ 9,185.80.6	\$ 9,717.38.6	\$ 10,321.29.6
NET EARNING FROM CARS	\$ 399,642.9	\$ 1,953,118.4	\$ 3,454,221.0	\$ 4,219,117.0	\$ 1,502,997.9
TRAFFIC AVERAGES:					
Average Revenue per Passenger	\$ 2.95	\$ 3.02	\$ 3.06	\$ 3.25	\$ 3.10
Average Net Earning per Passenger	\$.05	\$ 0.11*	\$ 0.30	\$ 0.26	\$ 0.10
Average Net Earning per Car per Day	\$ 0.22	\$ 0.80*	\$ 1.76	\$ 2.10	\$ 0.80
Average Mileage per Car Operated	146,589	150,004	154,232	158,648	159,722
Average Journey per Passenger (Miles)	456	462	486	517	532
Average Miles per Car per Day	402	411	431	455	498
Average Loading per Car (Passengers)	9.35	9.42	10.12	10.51	10.10

*Figures in italics denote loss.

Includes Pullman proportion of expense of operation of air conditioning equipment.

*After provision for Federal Taxes.

of lightweight welded alloy-steel freight cars then being built by the manufacturing subsidiary for experimental purposes. Two hundred of these lightweight box cars were completed and delivered to interested Railroads under lease-purchase arrangements in 1938. Periodic checks of the condition and operating qualities of the cars since their installation in regular service fully sustain previous expectations of efficient and economical performance. Widespread replacement of older heavy-type box cars by the new lightweight unit, which weighs about one-fifth less than the conventional car, would effect an important reduction in the cost of providing freight service and a substantial increase in revenue load capacity.

* * *

Equipment and Property, Additions and Retirements

Additions to Property and Equipment account in 1938, classified and compared with similar expenditures during 1937, were as follows:

	1938	1937
Air conditioning apparatus in cars	\$ 366,912.91	\$ 2,957,410.88
Routine additions and betterments to cars	265,246.21	276,653.57
New and rebuilt Pullman cars	12,096,918.43	3,823,050.00
Improvements at laundries, shops, district offices, etc. . .	195,479.10	107,012.63
Improvements to plants, Pullman Railroad, and other properties of manufacturing subsidiaries	1,031,769.33	1,666,045.88
Gross Additions	\$13,956,325.98	\$ 8,830,172.96
Less: Retirements of cars and other property	10,695,077.01	12,825,223.38
Net Retirements		\$ 3,995,050.42
Net Additions	\$ 3,261,248.97	

During the year 1938 there were installed 157 Pullman general service cars, new and rebuilt, and 342 cars of obsolete types were retired, leaving a total of 7,578 cars of all classes on the equipment list of the carrier subsidiary at the close of 1938. The \$10,695,077.01 of retirements during 1938 consisted of standard-type Pullman general service cars—which were either rebuilt, revalued and reinstated in the equipment list, or scrapped—plus manufacturing facilities abandoned and written out of Property Account.

There were 4,957 air conditioned Pullman cars in operation at the end of 1938, out of an estimated total of 11,000 air conditioned cars of all ownerships on the country's Railroads. Some further increase in the number of air conditioned Pullman cars is scheduled for 1939, although a large proportion of the active fleet is already equipped with this modern facility.

* * *

Reserves and Surplus Adjustments

The gross addition to Depreciation Reserves in 1938 was \$12,442,437.35 as compared with \$12,182,751.77 in 1937. The methods and rates of depreciation applied to property and equipment of the carrier subsidiary are as prescribed by the Interstate Commerce Commission beginning in the year 1937. The reduction in depreciation charges on air conditioning equipment made effective in 1937 by order of the Interstate Commerce Commission was offset in 1938 by setting aside as a deferred credit \$2,218,053.93 of air conditioning revenue which restores in effect, so far as the year's income account is concerned, the higher basis of depreciation prevailing on this element of equipment investment prior to 1937. This procedure has received the approval of the Interstate Commerce Commission, and with continuance in future years will provide a credit for absorption of the depreciation charge that will accrue at the present reduced rate, over a period of years following termination of the present air conditioning agreements and of the collection thereunder of

per diem charges containing provision for depreciation at the rates originally contemplated. No changes have been made in the methods or rates of depreciation applied to Property and Equipment of the manufacturing subsidiaries.

* * *

Proposed Adjustment of Certain Reorganization Valuations in Surplus and Property Accounts, and of Stated Value of Capital Stock

Upon the recommendation of the management, and in accordance with the opinion of its advisors on the accounting and legal questions involved, the Board of Directors has by resolution adopted at its meeting on February 15, 1939, ordered that, in conjunction with the regular Annual Meeting of Stockholders to be held on April 19, 1939, there be called a Special Meeting of Stockholders to act upon a recommendation by the Board that the stated value of the capital stock of the Corporation be reduced from \$50 per share to \$40 per share, and that the amount of such capital reduction in the outstanding shares be credited to Surplus.

The Board's resolution also directs that Stockholders be informed that upon approval by Stockholders of the proposed adjustment in stated value of capital stock the Board of Directors will, at its Annual Meeting scheduled to be held April 19, 1939, following the Special and Annual Stockholders' meetings called for that day, proceed by resolution to authorize an appropriation out of Surplus, in the total amount of \$33,143,225.38 to eliminate the entire remaining balance of the 1927 appraisal increase in valuation of carrier subsidiary properties (represented in depreciable property \$32,042,189.52 and in land \$1,101,035.86) now reflected in Property and Surplus Accounts appearing in the Consolidated Balance Sheet.

* * *

Taxes

Total taxes of \$5,506,039 paid or accrued by the Corporation and its subsidiaries in 1938 absorbed more than 70% of the Consolidated Net Income before provision for such taxes and were equivalent to \$1.42 per share on the outstanding capital stock, or more than double the amount available for shareholders. Notwithstanding the drastic slump in 1938 earning, the total tax bill was only about one-fourth smaller than in 1937, when it absorbed 38% of available Net Income.

Taxes under the Federal Social Security and Railroad Retirement Acts are becoming increasingly burdensome, and are rapidly assuming the character of a new and heavy prior charge against earning. In 1938 the taxes accrued by the Corporation and its subsidiaries under these Acts amounted to \$2,051,938. In 1936 the corresponding charge was \$1,180,777, and in 1934 there was no similar expense as neither Act had become effective. The taxes levied under these Acts will increase steadily until the maximum rates are reached in 1949. A separate national system of unemployment compensation for employees of carrier companies will become effective July 1, 1939, thereby removing such employees from the coverage of the Social Security Act. The system will be supported by a 3% tax on payrolls, to be paid entirely by the employing companies, and while the initial assessments will be no larger than those now being made under the unemployment provisions of the Social Security Act, the benefits provided by the new Railroad measure are so liberal that the 3% tax rate may prove inadequate.

* * *

Dividends

Dividend disbursements in 1938 totaled \$5,252,941 or \$1.37½ per share, which was one-half of the amount paid in 1937. Less than one-half of the total 1938 distribution was covered by the year's earning, with the balance necessarily paid from Surplus.

* * *

Respectfully submitted on behalf of the Board of Directors,
DAVID A. CRAWFORD,
President

News (Railway Officers)

(Continued from page 544)

Railway Age of March 4, was born at Sheboygan Falls, Wis., on October 29, 1856, and entered railway service on April 1, 1879, as a chainman on location on the Milwaukee, Lake Shore & Western (now part of the North Western), later being promoted to instrumentman, assistant engineer and division engineer. In 1895, he was appointed assistance engineer on the North Western and in 1897, he was promoted to division engineer. He served in that position and as resident engineer on construction of various lines in Wisconsin and Illinois until 1914, when he was advanced to engineer of maintenance. In 1918, he was promoted to assistant to the chief engineer and two years later he was further advanced to assistant chief engineer. Mr. Rounseville retired in November, 1926.

Winfield Scott Burton, foreign freight traffic manager of the Western Maryland, with headquarters at Baltimore, Md., died on March 22 at his home in Homeland, Md. Mr. Burton was born at Greenwood, Md., on October 29, 1880, and received his education in the public schools of Baltimore and at City College and Polytechnic Institute. He began his railroad career with the Baltimore & Ohio in 1898 and served in various capacities at Baltimore; Cleveland, Ohio; and Pittsburgh, Pa. Mr. Burton entered the service of the Western Maryland on January 1, 1914, as chief clerk, traffic department, and on September 1, 1916, was promoted to freight tariff agent at Baltimore. During the period of federal control he continued his service with the road in special rate work and when the lines were returned he resumed his former duties as freight tariff agent of the Western Maryland. On February 15, 1921, he was appointed division freight agent, Baltimore; on March 17, 1924, foreign freight agent; and on February 1, 1927, general foreign freight agent. Mr. Burton was appointed foreign traffic manager on December 1, 1930. He was a past president of the Traffic Club of Baltimore.

C. S. Patton, retired general superintendent of motive power, Seaboard Air Line, with headquarters at Norfolk, Va., who died in that city on January 13, was born on April 4, 1871, at Telford, Tenn. Mr. Patton was educated in the schools of that city and entered railroad service with the Norfolk & Western in September, 1892, as brakeman. He was later appointed fireman and from February, 1897, to November 20, 1901, he served as engineer for the same road. Mr. Patton entered the service of the Seaboard Air Line as engineer on the latter date and in February of the following year he was promoted to road foreman of engines. He became trainmaster in August, 1905, and six years later he was appointed master mechanic, serving in that capacity until September, 1916, when he was promoted to superintendent. He held the latter position until July, 1918, when he was appointed superintendent of motive power, continuing in that capacity until September 6, 1929, at which time his ap-

pointment as general superintendent of motive power became effective. Mr. Patton retired from the latter position on May 18, 1936.

Harry H. Brown, who retired as vice-president in charge of traffic of the Great Northern, with headquarters at St. Paul, Minn., because of ill health on January 1, 1938, died at his home in that city on



Harry H. Brown

March 21, after a prolonged illness. Mr. Brown was born in Chicago on June 11, 1876, but soon moved to St. Paul where he graduated from high school in 1893. Shortly thereafter he entered railway service as an office boy on the Great Northern at St. Paul and later advanced through the positions of correspondence clerk, mailing clerk, assistant traffic clerk, rate clerk, traffic clerk and chief clerk. In 1908, he was further advanced to assistant general freight agent and in 1916, he was promoted to general freight agent. Two years later he was advanced to assistant traffic manager and in 1920 he was appointed assistant freight traffic manager. Mr. Brown was promoted to general traffic manager in 1928 and in 1931 he was further advanced to vice-president in charge of traffic.

Charles Ellsworth Chambers, who retired as superintendent of motive power



C. E. Chambers

and equipment of the Central of New Jersey on October 1, 1933, died on March 20,

at his home in Roselle, N. J., after an illness of six months, at the age of 73. Mr. Chambers was born on October 18, 1865, at Augusta, Ill., and entered railroad service on July 5, 1885, with the Chicago, Burlington & Quincy, serving first in the bridge and building department and then as fireman and locomotive engineman. From 1901 to 1902 Mr. Chambers was road foreman of engines for the Reading, and from the latter date until December, 1918, he was successively general road foreman of engines, master mechanic, general master mechanic and superintendent of motive power of the Central of New Jersey. Under the United States Railroad Administration, Mr. Chambers served as mechanical assistant to the regional director of the Alleghany region at Philadelphia, Pa. He was appointed superintendent of motive power and equipment of the Central of New Jersey in 1920 and served in that capacity until his retirement. Mr. Chambers was a past president of the New York Railroad Club. He was president of the Master Car Builders Association from 1916 until 1918, when this association and the Master Mechanics Association were merged as a section of the American Railway Association, then serving until 1919 as first chairman of the Mechanical division.

Samuel H. Schneider, executive secretary of the Association of Western Railways, secretary of the General Managers' Association of Chicago and assistant to the



Samuel H. Schneider

chairman of the Western Association of Railway Executives, with headquarters in Chicago, died at his home in that city on March 17, after a long illness. Mr. Schneider was born at New Albany, Ind., on October 19, 1886, and entered railway service in 1903 with the Southern, serving this company in various capacities until 1911, when he went with the Missouri Pacific as secretary to the general superintendent and to the general manager. In 1915, Mr. Schneider became connected with the Association of Western Railways and the General Manager's Association of Chicago and later became secretary and treasurer of these organizations and assistant to the chairman of the Western Association of Railway Executives. On June 1, 1936, he was elected executive secretary of the Association of Western Railways.

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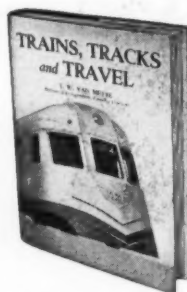
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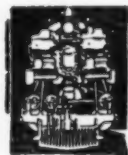
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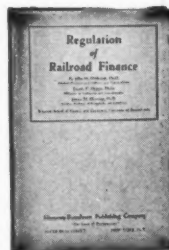
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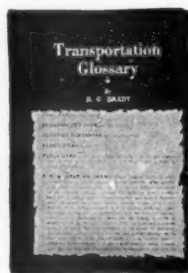
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Transportation Glossary

By H. G. BRADY



Technical and semi-technical terms, phrases and expressions in more common use in railway, highway, air and marine transportation, and in port traffic are concisely defined in this handy reference book. Ordinary dictionaries, thesauri and law book sources furnish little information on transportation terms and this book fills a long felt need. It is printed in large clear type and cross references facilitate quick tracing of desired information.

119 pages, 5 x 7 inches, flexible. \$1.00

The Year at a Glance

RAPID RECOVERY: The financial results of the two halves of 1938 show the most violent contrast ever recorded, the editorial article herein points out. Normally, 40 per cent of net railway operating income is earned in the first half of the year and 60 per cent in the latter half. But in 1938, 81 per cent of the year's net railway operating income was earned in the second half.

THANKS TO NOBODY: The fact that the railway situation is so much better at the end of 1938 than at the middle thereof, the editorial continues, is due to no serious effort by such authorities as the Commission or the President to ameliorate carrier hardships (since neither took any action in their behalf commensurate with the need). The sole salvation, such as it is, of the railway situation has been the revival in traffic.

LIBERAL LOANS COMING?: Will the government seek to promote national recovery and railroad rehabilitation by offering loans on favorable terms to the carriers? The evidence pro and con is weighed in an article herein—and instances are cited as to how the railroads could spend vast sums, to their own and the public profit, if funds were available on acceptable terms.

LEGISLATIVE OUTLOOK: The proposals for dealing constructively with the national transportation muddle are considered on another page in this issue. Analysis leads to the opinion that no legislation of genuine value will be enacted unless political strength can be rallied to dislodge the pressure groups—which have a vested interest in railroad misery.

A WEAK DEFENSE LINK?: Guns and ammunition and soldiers—but no quick means of getting them in large numbers to the place where the enemy threatens. Is transport the weakest link in the program for more adequate national defense? An article in this issue analyzes the available information—and cites some expert observations made about the railroads and the last war, which indicate that experience has not taught the Washington authorities much.

LOCOS WAX HOARIER: Only 4½ per cent of the railroads' motive power is less than 9 years old, while 70 per cent is 19 years old and older. Our antiquarian presents the figures herein, and considers the possibilities that, one of these days, the inventory may be rejuvenated.

NET DEFICIT: After fixed charges, the railroads suffered a net deficit of 125 millions in 1938, as compared with net income of 98 millions in 1937.

CAR SHORTAGES COMING?: If freight car retirements continue at the present rates, if traffic picks up to the 1937 level, and if new car purchases are not

materially increased—then car shortages will occur in 1940. Such is the conclusion of our mechanical editor, who presents the supporting evidence in an article elsewhere herein.

CARLOADINGS: In the first six months of 1938, carloadings were off 25 per cent under 1937, in the third quarter the decline was reduced to 22 per cent and, in the fourth quarter, to less than 3 per cent—it is revealed in the summary article herein by Dr. J. H. Parmelee. For the entire year, the carloadings decline was about 19 per cent.

TAXES: In 1938, tax accruals totaled 345 millions, which was an increase of about 20 millions, or 6 per cent, over 1937. Tempering the wind to the shorn lamb is a precept, apparently, of which the taxing authorities are ignorant.

UNCLE SAM, CREDITOR: Net indebtedness of the railroads to the government is revealed at 469 millions at the end of last November—an increase during the year of 63 millions.

BANKRUPT ROADS: One hundred and eleven companies, operating about 78,000 miles of line—or 31 per cent of total mileage—were in receivership or trusteeship at the end of the year.

TRAFFIC VOLUME: Freight traffic (ton-miles) was approximately 20 per cent less in 1938 than in 1937. Passenger volume (passenger-miles) was less than 12 per cent under 1937.

NET OPERATING INCOME: The net railway operating income earned in 1938 was approximately 362 millions—off almost 39 per cent from 1937. The return on the investment was less than 1.4 per cent.

LOCO ORDERS: In 1938, locomotives ordered for domestic service totaled 228—only 36 of them being steam. In 1937, orders totaled 368—176 being steam.

CAR ORDERS: Freight cars ordered for domestic service in 1938 totaled 16,539—as compared with 52,738 in 1937. Passenger car orders totaled 269 in 1938—as against 829 in 1937.

OPERATING EFFICIENCY: Operating performance continued to improve during 1938. Gross ton-miles per train-hour averaged 31,085 (as compared with 30,349 in 1937), and freight train speed reached 16.6 m.p.h. (16.1 in 1937).

EMPLOYMENT: The number of employees in 1938 averaged 940,000—indicating that 174,000 who were working in 1937, were not doing so last year. But those fortunate enough to hold on to their jobs drew average pay of \$1,847, the highest payments on record—being one of the principal reasons why the railroads had to furlough so many men.

THE I. C. C. REPORTS: The commission, in its annual report to Congress, summarized in the news pages herein, looks hopefully to the solution of the country's railroad problem. As its contribution to this goal it proposes legislation imposing a "reasonable fee" for admission to practice before its bar, more stringent legislation dealing with standard time and five other proposals of approximately equal heft. The transportation industry is indeed blessed, that its well-being is guarded by a body so daring in its realistic dealing with fundamental issues. If the commission can only induce the country to accept standard time, and restrict the practice of commission law to the economically élite—surely then the day of prosperity will quickly dawn for us all.

NEW FINANCING: Except for a \$30,000,000 refinancing issue by the C. & O., a merger flotation of \$28,000,000 by the Iron Range and a \$10,000,000 note issue by the Express Agency—there was no new financing by the railroads in 1938 which reached the stage of public offering by the underwriters. A few equipment trust issues were sold privately. If—as competent economists claim—genuine national recovery awaits revival of capital investment, then the railroads have lots to revive.

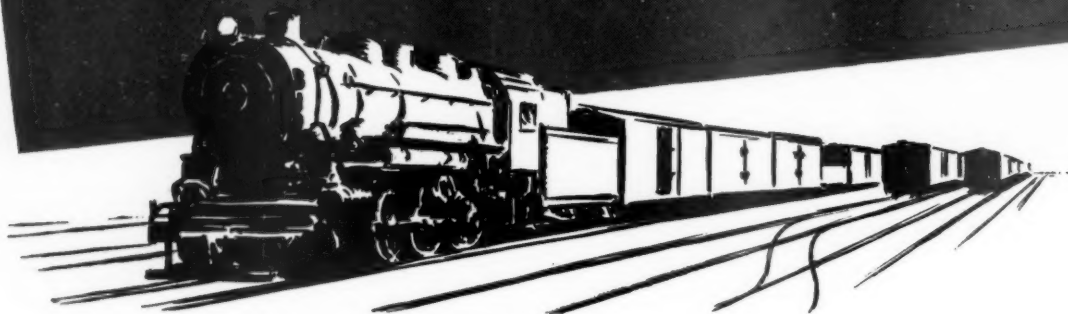
OUTLOOK FOR '39: Even without any favorable legislation, present indications are that the railroads may handle 36,000,000 carloads of freight this year—a prospect which is analyzed in an article herein. If traffic rises to this volume, net railway operating income ought to top 600 millions—and railway buying from manufacturers should materially exceed 600 millions (as contrasted with less than 400 millions of such purchases in 1938).

IN CANADA: The "recession" in the Dominion was not half as bad as it was in the States (carloadings being off only 7½ per cent as compared with 19 per cent south of the border). The summary of developments in the Dominion, given herein, reveals the eager interest which the "agreed rates" experiment has evoked.

AT LONG LAST: The decisions by referees of labor relations cases on which National Adjustment Board members are unable to agree are, finally, going to get a going-over by a court of law. These referees have handed out hundreds of thousands of dollars of railroad money to employees for work not actually performed—and the railroads have been scared to challenge such decisions in court, because the unions have threatened to walk out rather than submit to a court test of the legality of their referee winnings. But now, at last, the Washington Terminal has taken one of these decisions into court. Such an indication that the worm has begun to turn is as hopeful a note as we can think of, on which to end this summary of a distressing but eventful year.



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The Week at a Glance

LEISERSON AS REPORTER: The chairman of the National Mediation Board last week made a radio speech in favor of the Wagner Act. The gist of his argument was that the hollering of business against the Wagner Act was unjustified, because the Railway Labor Act is tougher on employers than the Wagner Act is. And, he reported to his innocent listeners, there is no opposition to the Railway Labor Act and no "agitation" for its revision. How can democracy be expected to work, the leading editorial herein asks, when the electorate is given such inaccurate information on a crucial issue by a responsible public official? There is plenty of opposition to the Railway Labor Act, as the editorial shows, and Dr. Leiserson has either been hibernating for the past eight months or else he is an out-and-out mythologist.

LEISERSON AS PROPHET: While Dr. Leiserson's account of the feeling toward the Railway Labor Act was of a degree of accuracy which, if a newspaper reporter were guilty of it, would get him canned—not all of the good doctor's speech was so fantastic. In that part where he said that the Railway Labor Act is tougher than the Wagner Act, he was factually accurate. And where he cited the kind of things the government has done to the railroads as justification for the kind of things it is now trying to do to the remainder of industry, he took on the role of a prophet. The editorial article herein calls the reluctant attention of other industries to this painful point, namely, that as they are getting political help to feed off of the railroads today, they are creating precedents that tomorrow may be used for their own undoing.

RRs A "RELIEF AGENCY": The expansion of employment in competing agencies of transport makes it impossible for the railways to employ as many men as before—and public policy should not require the carriers to maintain a "relief agency" by providing jobs for employees displaced by technical changes. This is one of the pointed observations made on the current railway situation in a recent bulletin issued by the Institute of International Finance of New York University which is summarized in the news pages herein. Another interesting observation is the complete change in the purpose of consolidation. Before the depression, the justification for consolidation was primarily to continue in operation some weak roads which could not survive alone. Now the primary purpose of a merger should be to eliminate waste and reduce transport costs, the bulletin points out.

EXTEND BARGE LINE?: The Federal Barge Line is a means whereby the taxpayers, having already given selfish shippers their shirts in the form of costly waterways, may also give them their pants, by paying a part of the operating costs of water carrier service. And the pork

barrel legislators are one by one seeking this handout for their constituents. The Mutual Transportation Committee, formed by railroad employees in the Southeast, for the purpose of preventing the expansion of federal barge services in their sector, is going to need to be as busy as the one-armed paperhanger. The committee's next move might well be the establishment of a local unit in the Pacific Northwest because Senator McNary has introduced a bill to put the Federal Barges on the Columbia River.

DR. MOULTON & 1066: "In principle," Dr. Harold G. Moulton of the Brookings Institution believes the idea of "postalizing" transportation—as urged by Ex-State-Senator Hastings of N. Y.—is sound. So he wrote this week to Senator Wheeler—stating that he has been interested in this idea since 1908, and that Brookings studies show that low prices are of "vital significance" in realizing the full advantages of mass production.

AUTO RATE WAR?: The truck-away boys, who filched about 50 per cent of the automobile traffic away from the railroads by cutting rates, are all burned up because the I. C. C. has refused to suspend new railroad tariffs by which railroad rates are set at 3 to 8 cents per 100 lb. under the truck-away rates. These high-minded transporters fear that a "rate war" may result—and they maintain that both truck and rail rates on autos are too low. These boys are beginning to find out that taking it—as the railroads had to do for years—is not quite as pleasant as dishing it out.

SENATE COMMITTEE: There are five new members on the crucially important Senate Committee on Interstate Commerce viz., Lundeen (D., Minn.); Steward (D., Tenn.); Tobey (R., N. H.); Reed (R., Kans.); and Gurney (R., S. D.) The complete membership of the committee is given in a news item in this issue.

EQUIPMENT: A considerable order for passenger cars and some interesting feelers for locomotives are reported in our equipment news columns this week.

N. E. BUS MERGER: The I. C. C. has authorized the New England Transportation Company (subsidiary of the New Haven) to sell its long-distance bus lines to New England Greyhound—the New Haven to be paid by a stock interest in the Greyhound. The commission stipulates, however, that the New Haven stock in Greyhound shall not have voting rights, so the railroad will have no voice in the control of its bus affiliate. Some of the New York papers have played up this merger, contending that it gives the New Haven a passenger traffic "monopoly" in its territory—overlooking, apparently, the fact that most New Englanders, like other Americans, still have the old family jallopoy in the shed in the back yard.

FORWARDED ORDER DELAY?: Western railroads have asked the I. C. C. to hold off the dead-line on its order in the freight forwarding case for six months after February 17. The commission urged that the railroads take over the business now handled by forwarders—but, if they won't do that, anyhow they must charge the forwarders adequately for the "extraordinary services" they now receive from the railroads.

ST. LAWRENCE THREAT: Some of the politicians are reported to be toying again with the St. Lawrence Seaway project as a measure of unemployment relief. There are all kinds of sweet-smelling excuses which can be offered for this ditch—but none of them are quite pungent enough to overcome the stench of politics which underlies them all. While, lower and more reeking even than the politics, lie the commercial interests who are seeking hand-outs from the public treasury.

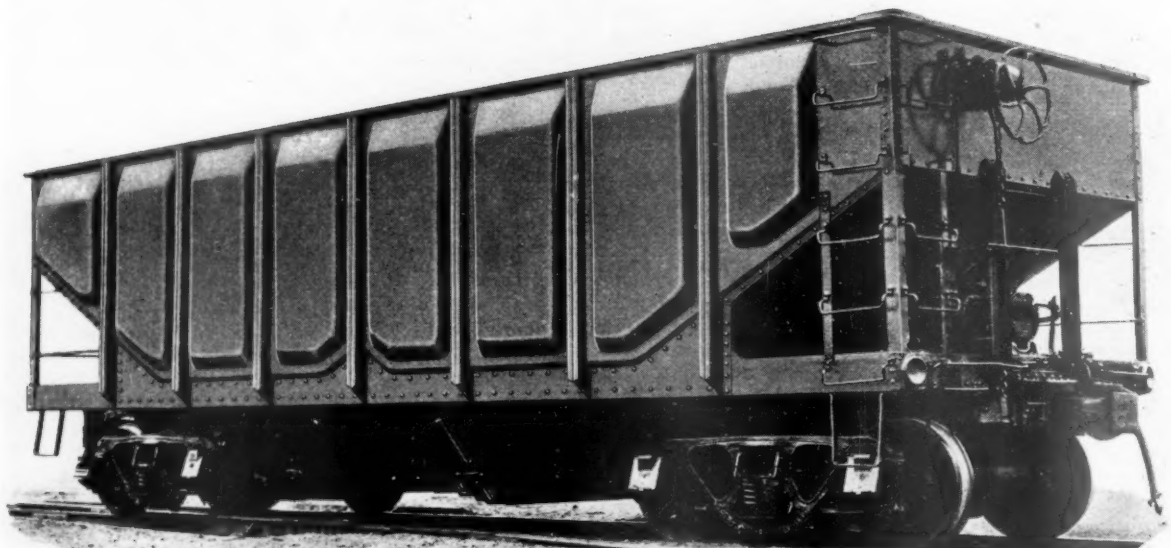
RUTLAND WAGES: The Rutland management is taking steps to make permanent the wage "withholdings" which were ordered by the court last July to enable the road to continue in operation. The road had a net income deficit of \$146,000. Conferences have been held with the various organizations, and it appears likely that resort may be had to the National Mediation Board. In announcing the proposed reduction, Receiver Morphy informed the union leaders that four steps are necessary to insure continued operation of the property: (1) Reduction in taxes; (2) Reduction in payrolls; (3) Co-operation of the bondholders; (4) Increase in revenues. The employees are informed that the road offers "to pay you all that we can afford to pay" and "you are confronted with the choice of working for reduced pay or risking the continuance of the operation of the railroad."

H. R. 97: The bill for the repeal of the long- and short-haul clause, championed heretofore by former Congressman Pettengill, has been re-introduced in the House by Congressman Martin of Colorado and has been given the number H. R. 97. A flock of additional bills affecting the railroads—not all of them favorably either—have been dropped into the hopper, and a news story herein surveys them.

LEA LEGISLATION: Chairman Lea of the House Committee on Interstate Commerce expects to introduce most any day now a comprehensive bill for the correction of evils in the transportation business. Tentative plans call for an early beginning of hearings—possibly as early as January 17. Meantime, the President at his January 10 press conference said he had not yet reached a decision on sending a special message on the railroads to Congress—he expected to have another confab with Senator Wheeler first.

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The Week at a Glance

"SILVER METEOR" SOON: On February 2 the S. A. L.'s new New York-Florida streamliner, the "Silver Meteor" will begin its maiden trip from Pennsylvania station, New York. The streamliner is for coach travel exclusively, and all seats will be reserved. It will make 10 round-trips a month, alternating in its Florida destinations between the East and West Coasts.

WILL UNIONS "HELP"?: The railways in 1937 provided jobs for 253,000 fewer employees than they would have had on the payrolls except for the recently increased competition of subsidized rivals. Railway employees, as represented by their unions, are politically powerful—probably equally so with, or more so than, the rivals of the railways. These employees could, therefore, probably assure the removal of many of the unwarranted political favors which railway rivals enjoy. Such action by employees, moreover, as the editorial article herein points out, does not require any desire by employees to "help" either their employers or their country. The only people they need consider "helping" is themselves. If they will do that intelligently—that is all anyone can reasonably ask of them; or need ask.

HOW "BIG" IS BUSINESS?: In size, some of it is huge. In statesmanship and in principle?—well, the facts speak for themselves. Business is divided in its attitude toward solving the problems of the railroads—and some of the so-called "big" business interests which yammer the loudest in behalf of the "American system of free private enterprise" will be the last to accord any such freedom to the railroads. And when it comes to tapping the public till—who shows the greatest skill, little business or "big" business? A few observations on this subject are presented in the editorial herein—with our compliments to some of the oil-producing, truck-manufacturing, road-building and chain-store enterprises, and any others which find that the shoe fits.

SUBSIDIES FOR RRS?: The railroads and business associated with the railroads—including *Railway Age*—would benefit, temporarily, if the railroads were given subsidies to offset the subsidies given to rival forms of transportation. The leading editorial herein points out, however, that the American people have already suffered disaster, and are threatened with ruin, because of the suicidal economic policies adopted to help special interests at public expense. Policies which, in the long run, are harmful to America are bound to be harmful to every interest in America—including the special interests with their hands in the public's pocket. This paper's opinion, therefore, is—that the railroads should not be pauperized too by being put on relief—but that the husky paupers which compete with the railroads should be kicked

off the public payroll. We hardly expect, however, that the well-fed lobbyists for the railways' pauperized rivals, in Washington and the state capitals, will take one look at that editorial and forthwith slink homeward.

"TRANSPORT ACT OF '39": Chairman Lea of the House Committee on Interstate Commerce has introduced his promised bill to put the transportation business on its feet again—and hearings will begin next week. The bill follows some of the recommendations of the committee-of-six, but neglects some crucial issues (such, for example, as long-and-short-haul repeal and a revised rule of rate-making). The I. C. C. would be enlarged to a membership of 19, with commissioners getting a 20 per cent increase in their wages. An "administrator" would be provided for in the new set-up with duties resembling those of the lamented "co-ordinator"—but the salary of this oracle would be only \$7,500, as contrasted with a commissioner's \$12,000 (reflecting, possibly, the I. C. C. wish that no ball-of-fire may get the administrator job).

INVENTORIES DOWN: Railway materials on hand continue to be used up more rapidly than stocks are being replenished. According to the latest available figures (given in greater detail in a short article in this issue), inventories on December 1 totaled 319 millions—which was down 4 millions from November 1, down 11 millions from October 1, and down almost 66 millions from January 1, 1938. If, as many hold, the 1938 "recession" was an "inventory depression," then we would seem to be getting pretty rapidly out of it.

REBUILT OVERPASS: Many of the horse-and-buggy type structures for carrying highways over railroads have had to be reconstructed for the present day, when the motorist resents having to slow down because of anyone's whim but his own. The rebuilding jobs which have resulted give rise to interesting problems—particularly if it is desirable to incorporate any part of the old structure in the new. One such project is described herein in an illustrated article—which, incidentally, shows how rapidly highway standards have been advancing, because the replaced structure dates back only to 1921.

PROFITABLY FOR WHOM?: The "War"* department has announced that 103 million dollars can be "profitably" expended for new rivers and harbors work during the fiscal year 1940, with an additional 52 millions of taxpayers' money to throw down the rat-hole in maintaining the ditches it has already dug.

* The only "war" these boys are fighting at the present time is against the railroads and the jobs of railroad employees. "Socialize transportation as fast as you can" seems to be the order they are working under—a heck of an assignment for self-respecting soldiers.

YANKEES GET TOGETHER: The Vermont Chamber of Commerce had Commissioner Eastman up to Montpelier last week to discuss for them the state's railroad problem (which is primarily the Rutland). "Absentee control" was one of the causes of the Rutland's troubles, the speaker said, and he offered sundry other sage advice (set forth in the news pages herein) in his usual salty style.

FLORIDA DITCH AGAIN: President Roosevelt has once more come out in favor of the Florida ship canal—"military needs" this time being one of the pretexts.

GROSS UP 5 PER CENT: Preliminary earnings statements for December indicate that gross revenues of the Class I roads were up about 5 per cent over December, 1937.

NO MERGER FOR THEM: The railway unions in Canada have once again committed themselves strongly against the proposed amalgamation of the Canadian Pacific and the Canadian National. They seem to believe that the government should clean up the competitive transport situation rather than do all its reforming on the railroads.

BATTLE OF HASTINGS: The I. C. C. has suggested that Congress give it orders to investigate the Hastings "postalization" of fares scheme, before it embarks upon such an investigation. It is a wise precaution—enabling the Commission to do the will of the politicians in Congress who scent front-page publicity in this proposal, while avoiding the horse laugh which would come its way if, in the fulness of its wisdom, it should deal seriously on its own emotion with this preposterous scheme.

MORE TRANSPORT BILLS: An additional flock of transportation bills was introduced in Congress this week, several of them to amend the Railroad Retirement Act. A G. O. P. solon from Illinois has introduced a bill the apparent purpose of which is to deny Federal aid to states which bar trucks of road-destroying weight off their highways.

C. OF C. CONFERENCE: The "transportation conference", organized under the aegis of the U. S. Chamber of Commerce, will hold its third meeting in Washington next week—to discuss, among other things, a proposed new rule of rate-making, a proposal that the railroads be permitted to establish train-load rates, a suggestion that Congress adopt a strong declaration in favor of private ownership and management of the railroads, and a measure to require a certificate of convenience and necessity from the regulating authorities for any addition to transport plant—including (we suppose) waterways and highways.

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The Week at a Glance

CARLOADINGS: For the January 21 week 590,359 cars, up 0.6 per cent from the previous week and 3.5 per cent above the comparable 1938 week; but 11.3 per cent under the corresponding week in 1937.

CHILLED-WHEEL CINEMA: F. H. Hardin, president of the Association of Manufacturers of Chilled Car Wheels took members of the New York Railroad Club to the movies on January 20, showing them a sound film depicting in comprehensive fashion the modern processes of producing chilled-iron car wheels. The narrator's story, in non-technical language, emphasized the extent to which scientific controls have replaced rule-of-thumb methods in the industry.

PIONEERS IN BIGNESS: Examining the paradox which finds railroads losing ground to competitors while remaining pre-eminent as low-cost mass producers of transportation the leading editorial herein discovers an explanation in the lack of a well-thought-out technique for the successful long-range conduct of large-scale enterprise. The pioneer Big Business in this country, the railroad industry has been the guinea pig for a vast and complex experiment in social control of enterprise—a fate which awaits other Big Business, whose enjoyment of "freedom to be selfish" has been reflected in disinterestedness or opposition to soundly-conceived remedies for railroad ailments.

WILLIAM P. KENNEY: The president of the Great Northern, who rose from Minneapolis newsboy, died on January 24 in St. Paul after an illness of several months. A protege of James J. Hill and long recognized as one of the country's outstanding traffic executives, Mr. Kenney recently gathered new honors in another phase of railroading when he made a remarkable success of refinancing G. N.'s funded debt and restoring a strong financial position.

B. M. C. PROGRESS: That section of the Interstate Commerce Commission's annual report dealing with the work of the Bureau of Motor Carriers indicates that a certain amount of administrative progress was made last year—despite the fact that the Bureau received from Congress only \$3,250,000 of the \$4,239,000 asked. Greatest progress was made in cleaning up "grandfather" cases, the final disposition of these being now in sight. B. M. C. activities are reviewed elsewhere herein; the I. C. C. report as a whole was covered in the issue of January 7.

LEA BILL: Hearings on Congressman Lea's proposed "Transportation Act of 1939" got underway before the House committee on interstate and foreign commerce on Tuesday with Commissioner Walter

M. W. Splawn, the I. C. C.'s 1938 chairman, as the first witness. The hearings, Chairman Lea said, will be "broader than the bill"—the committee "needs and invites constructive suggestions." Commissioner Splawn, speaking only for himself, endorsed the measure with a reservation on its provision for a 19-man I. C. C. He does, however, favor some reorganization of the commission along functional lines—the present set-up of regulatory duties, he said, is "breaking down two or three commissioners" who would not want their names mentioned. The railroads know just how they feel—that regulatory work has been tough on them, too.

DOCK WALL REBUILT: Because of the marked settlement and lateral movement of the dock wall at its Cleveland, Ohio, ore-unloading dock No. 11, the Pennsylvania recently undertook the reconstruction of nearly 500 lin. ft. of the wall, using spliced H-beam piles ranging up to 91.5 ft. in length to replace 40-ft. precast concrete supports. An illustrated article herein describes the project, other features of which were the driving and testing of an experimental pile to determine its bearing power, and the construction of a bridge to carry the new dock wall across a city water tunnel 9 ft. 4 in. in diameter.

HEADS STEEL FOUNDRIES: Thomas Drever, vice-president and treasurer of American Steel Foundries, has been elected president to succeed the late George E. Scott. A sketch of Mr. Drever's business career appears on another page herein.

RAIL SUBSIDY FOR DEFENSE: Such is one recommendation of the Railway Business Association which this week made public its program for railroad legislation, outlined in detail in this issue's "News" section. R. B. A. would have the "national defense subsidy" run from three to five years, and base it upon a definite proportion, "say 25 per cent," of expenditures for maintenance of way and structures. No subsidy money would be available for equipment.

TRANSPORT CLINIC: The United States Chamber of Commerce's National Transportation Conference held its third meeting in Washington this week. Out of it came the "business-man's" program for railroad rehabilitation, which is outlined in the "News" section of this issue.

TRANSPORT BILLS: Nearly every day finds one or more additional transport bills falling into the Congressional hopper, although the number has decreased measurably during the past week. The "super-highway" idea remains to the fore in the minds of the solons, bringing forth various measures to build such north-south, east-west roads in the grand manner.

"NON-DEMOCRAT:" Because there were already six Interstate Commerce Commissioners who had been appointed as Democrats, President Roosevelt was required by law to select a non-Democrat as successor to the venerable "dean" of the commission—Balthasar H. Meyer, a commissioner since 1911. The President found his man in Thomas R. Amlie, Wisconsin Progressive and former member of the House where he is remembered as sponsor of a "human rights amendment" to the Constitution and co-sponsor of an "Industrial Expansion Act," calling for the operation of all industry at "optimum" capacity. At a press conference this week the President was irked at questions as to Mr. Amlie's qualifications, although he did point out that the appointee was a non-Democrat. While Chairman Wheeler of the Senate committee on interstate commerce is disposed to defer comment until Mr. Amlie is heard by that committee, other solons have not been so reticent. Among the latter was Senator Burke, Democrat of Nebraska, who did not know that Mr. Amlie "has to be opposed to the democratic form of government in order to qualify as a non-Democrat."

BARRAGE FROM HOME: If it be true that Mr. Amlie has been a prophet of a "new order," he would appear, like all prophets, to have become a victim of that traditional fate of being somewhat "without honor in his own country." He was defeated last year in the Progressive primary for a Wisconsin senatorial nomination; and this week both houses of the Wisconsin legislature passed similar resolutions requesting President Roosevelt to withdraw the nomination, and calling upon the Senate to deny confirmation if the President refuses.

FREIGHT-RATE BLOC: Western and Southern congressmen have formed a bloc to force an adjustment of the country's inter-territorial freight rate structure. The present set-up has long been a subject of Southern complaints, and the Dixie boys have convinced their Western colleagues that the latter's constituencies also need the aid of legislative rate-makers. Georgia's Ram-speak is chairman of the group.

PROBLEM-SOLVERS' WEEK: Another White House Conference of "railroad-problem-solvers" was held this week when President Roosevelt met with members of the committee-of-six, Chairman Wheeler of the Senate committee on interstate commerce, Chairman Lea of the House committee on interstate and foreign commerce and Interstate Commerce Commissioner Splawn. The outcome, Senator Wheeler revealed, was an agreement to try for some common understanding through the process of introducing legislation for study and revision in committee.

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The Week at a Glance

BUSINESS, DUMB OR 2-FACED?:

The strongest opposition to granting to the railroads freedom from burdensome regulation and government competition comes from Big Business—which claims the prerogatives of “free private enterprise” for itself, but actually is using government power to help it victimize the railways, the farmers and little business. God help “the American System,” the leading editorial herein implores, from the defense of such “friends”! Such scalawags belong in the camp of the Communists and the Nazis—not among people who respect the real democratic tradition of “equal rights for all, special privileges for none.”

A DUD CONFERENCE: A fine example of business men expounding pious principles which they are not willing to put into practice is given by the Transportation Conference, conducted under the auspices of the U. S. Chamber of Commerce. These pussyfooting conferenciers went on record in opposition to government ownership of railroads, but refused to forswear the government-created rackets which are making government ownership all but inevitable. (Many of the conference members represent industries which are on the receiving end of the political policies by which the railroads are being milked.)

“SILVER METEOR”: The Seaboard Air Line’s all-coach streamliner paid a visit to New York’s World’s Fair grounds on February 1, and was formally christened “Silver Meteor” by the Fair’s official bottle-buster—a damsel called “The Girl of Tomorrow” by the showmen who are staging the Fair. On February 2 the Meteor began its initial trip to Florida under auspicious circumstances (which is tall talk meaning that all her seats had been sold in advance for four trips).

DOCTORS DISAGREE: Whereas Chairman Lea would help the railroads by increasing the size of the I. C. C., Senator Wheeler would like to whittle down the Commission membership—presumably also to improve the nation’s transportation picture. He outlined his views in a speech at Buffalo this week, which is reported elsewhere herein; and he seems to think that an improved wringer is one of the main railroad requirements.

SIGNIFICANT TRUCK CASES: The Supreme Court handed down a couple of interesting decisions this week having to do with truck transportation—indicating that some of the extravagant claims of the truck people are not clicking. One was a Georgia case in which an interstate truck operator objected to a tax on the ground that it was not “allocated” to the highways he used, and he complained also at a tax higher on a “for hire” operation than on others. The court held that a truck tax is okay as long as it does not exceed the

worth of the privilege of using the highways (which gives the taxing authorities a lot of latitude that none of them are using up). It also decided that a special classification of “for hire” carriers for tax purposes had a reasonable foundation. Another decision upheld states’ rights in truck drivers’ hours’ regulation.

GUNS WITHOUT WHEELS: There cannot be any national defense adequate to protect America from even a puny enemy—unless the program includes a well-maintained inland transportation machine, geared to handle the peak war loads of industry, the army and navy at maximum efficiency. Thomas Parkinson, president of Equitable Life Insurance, is the latest far-seeing citizen to call attention to this sobering fact. “The railroad industry is the country’s greatest defensive tool,” he declared recently at a meeting of the N. Y. Board of Trade.

BIG JOB, MEAGER PAY: At the hearing on his transportation bill last week, Representative Lea explained that the proposed salary of \$7,500 for the “administrator” (who would have about the same duties as the former “co-ordinator”) was a mistake. The job ought to pay more than that. And Mr. Splawn apparently does not believe that any Interstate Commerce Commissioner should have the administrator job—emphasizing his belief that the appointee should be a “business man.” Upon questioning by Representative Wolverton, Mr. Lea indicated that his bill was based on the Splawn-Eastman-Mahaffie report of last year, rather than upon the report of the “committee-of-six.”

MERGER BY FORCE: Railroad difficulties can be largely surmounted by economies achieved by co-ordination and consolidation—so Commissioner Eastman told an audience at Rochester, N. Y., last Saturday night. But he does not believe that such mergers will come until the Federal government compels them. Granting that consolidation and co-ordination will save all the money its friends say it will—British experience shows conclusively that it is no cure-all. In Britain mergers and pooling have been carried to the point of doing away with all competitive railway services—and still the British railways have found it necessary to embark on a campaign for a “square deal”—from the politicians.

LOW FARES TO FAIRS: A circle tour whereby a passenger residing anywhere in the country may visit both the New York and San Francisco fairs at a rate of \$90 for coach travel or \$135 in Pullmans (Pullman charges additional) has been announced by the A. A. R. With all these special rates it is going to be mighty difficult for the high-fare and low-fare camps of the Eastern railroads to decide the issue between them on the basis of fact.

OPEN-END MORTGAGES: In a report from his holding company investigation Senator Wheeler takes a rap at a number of proposed reorganization plans and promises a bill to amend the bankruptcy statute. Particularly obnoxious to the senator are open-end mortgages and income bonds.

NEW TRANSPORT BILLS: A bill embodying all the recommendations of the Committee-of-Six will shortly be introduced in Congress. In testifying on the Lea bill this week, Carl R. Gray drew attention to the public service characteristics of railway management, citing his war-time experience when, as a public official, he had done precisely the same kind of work as he had while heading a private corporation.

NIT LEAGUE MEETING: The National Industrial Traffic League will hold a special meeting at the Hotel Washington in Washington on February 23 to establish the League’s attitude on the Lea Bill and other proposed transportation legislation.

FIREMAN HONORED: A brave locomotive fireman—Robert S. Elrod, of the Southern Railway, Atlanta—has received a medal of honor from the President for his bravery in saving his engineer from a steam-filled locomotive cab following a collision—thereby exposing himself to severe burns.

AMLIE HEARING: A sub-committee of the Senate Committee on Interstate Commerce will hold a hearing on February 6 on the qualifications of Thomas R. (“Jackie” Cooper”) Amlie as an Interstate Commerce Commissioner. While great howls have gone up in the press over this appointment, the opposition seems more exhibitionist than practical, to judge from the requests for assignments of time before the Senate sub-committee. Up to February 1, only two individuals had asked the committee for such time—and the commendatory letters and telegrams received by the committee have exceeded the protests. This last clearly indicates how much more articulate and better organized the “popular front” is than the friends of traditional Americanism.

TRUCK DRIVER RULES: After long delay and rehearings—at the urging of truck operators—the I. C. C. has again issued a set of rules for safe driving by truck drivers in interstate commerce. Ten hours is retained as the maximum daily driving (but time on duty not spent in driving is excluded, so the drivers can still put in a pretty fatiguing day without offending the I. C. C.). It will be interesting to see what the truck operators do in the light of their threats that a 10-hour driving day would force them either (1) To increase truck speed from 40 to 45 m. p. h., (2) To shorten driving divisions and hire more drivers, or (3) To abandon operation.

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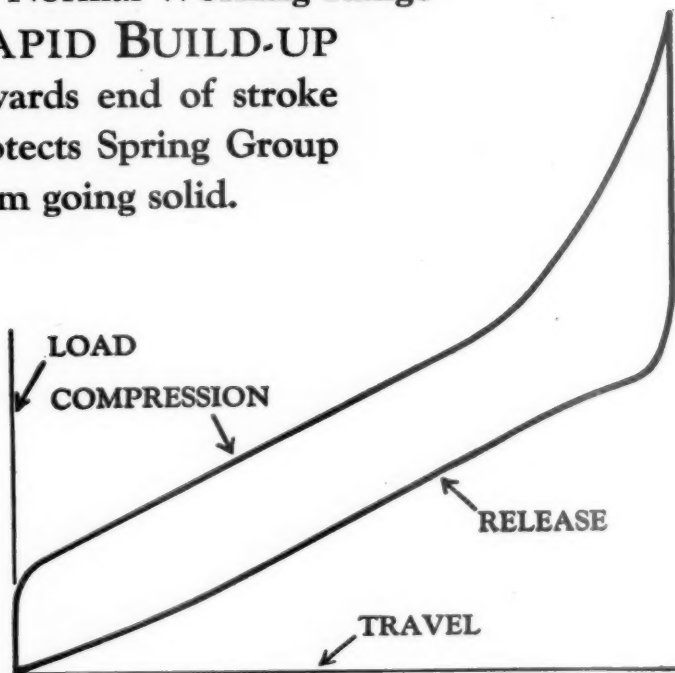
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The Week at a Glance

SUBSIDIES TO RR's?: It means a great deal to the employment and prosperity of every state in the Union whether the railroads spent (as they did in 1938) less than 400 million dollars with the manufacturing industry, or almost 1400 millions (as they did in 1929 and, roughly, in each of the six years which preceded it). The R. B. A., spokesman for the manufacturers of railway materials, has asked that the government subsidize the railways to the tune of 100 or 200 millions a year—to enable them to correct some of their deficiency in maintenance and equipment renewals. Before anybody gives this subsidy proposal the bird, the leading editorial herein suggests, he might propose an alternative method by which a socially-necessary increase in railway purchases can be assured. Certainly friends of subsidies (and their name is legion) to competitors of the railroads haven't a logical leg to stand on in opposing similar subsidies to the railroads.

BRANCH LINE SAVIOR?: A light rail car—designed to give freight, passenger and head-end service on light traffic branch lines—is described in an illustrated article herein. Making a daily round-trip on a 45-mile branch line for 6 days recently, the car averaged 3,721 gross ton-miles and 163 passenger-miles per round-trip, with gasoline consumption at 2.8 gal. per mile.

C. N. R. MONTREAL TERMINAL: The Canadian National has revived, under considerably modified plans, its great Montreal terminal project upon which work was suspended in 1931. The amended project is described in an article on another page in this issue. The new plan provides for a central terminal at the Tunnel station site (as did the original project), but on a less ambitious scale.

"FELLOW TRAVELER": Production-for-Use-and-not-for-Profit Amlic has had his day in court this week before the Senate sub-committee which is examining his qualifications to serve as an Interstate Commerce Commissioner. From a look at the testimony, reported herein, if Mr. Amlic is a qualified "fostering guardian" for privately-owned railroads, then the Big Bad Wolf would make an ideal shepherd. As is usual when a Red or a "Fellow Traveler" is in the dock, the spectators' seats were largely occupied by his sympathizers—ready to applaud when anybody said anything good about him. The left wing never misses a chance like this—just as the "rightists" never take advantage of one.

OUTSIDE AUDITS: The interest of the I. C. C. in so-called "outside audits," whereby a railroad turns over its freight bills to an outside concern to examine for possible claims it may have against other roads in the division of interline revenues, has revived. The commission this week put out an order requiring all Class I roads to

report semi-annually on all sums they pay out in excess of \$5000 per annum to persons other than employees for such audits. In an investigation into re-auditing practices four years ago, the commission went on record in opposition to hiring such auditors to make a "one-way" audit—that is, uncovering a road's claims against others, but not its indebtedness to others.

BRITAIN'S "SQUARE DEAL": The campaign which the British railways are waging to win public support for relaxing commission control of railway rates has, in some particulars, won important shipper support. Meantime, the railways have modified their proposals somewhat, to meet objections. A survey of the status of this forthright and courageous drive by the British roads will be found in the news pages herein.

POT AND KETTLE: Representative Parsons of Illinois made a speech in New Orleans on Tuesday of this week in which he favored diversion of Great Lakes water to improve the waterway from Chicago to the Gulf. At the same time, he took a crack at the St. Lawrence Seaway, predicting dire results to Great Lakes cities if it were constructed. Another case of special interests with designs on the public purse denouncing as rascals others with the same purpose in mind.

RATE RULE: The trouble with the present rule of rate-making, requiring the I. C. C. to give weight to "the effect of rates on the movement of traffic," is that the commission has taken the clause to mean that it must decide upon the wisdom of the railroads' tariff policies. Such was the expression of R. V. Fletcher this week in testifying on the Lea bill. There was some talk of recessing the hearing to give the A. A. R. time to bring in its bill giving effect to the committee-of-six report, Chairman Lea expressing a fear that a recess might lead committee members to lose interest in the legislation.

PEACE OR JUSTICE?: Commissioner Aitchison made a very learned speech at the Franklin Institute in Philadelphia on Tuesday, in which he arrived at the conclusion that it is more in the public interest to establish peace between the competing agencies of transport than it is to determine, first, which one deserves the public patronage. The only trouble with this suggestion is that, by the time the I. C. C. gets around to determining where justice and the real public interest lies, the momentary underdog at the time "peace before justice" is proclaimed may have expired for want of nourishment. A for-hire motor service, temporarily banned, would quickly come into service again once the ban was lifted—but a dismantled railroad branch line doesn't come back, as belated accorders-of-justice have ruefully discovered in many rural areas.

FUNCTIONAL SPLIT: Carl Gray again this week in an address at Philadelphia urged the necessity of dividing regulatory duties on "functional" lines (that is, having the rate-makers make rates for all transport agencies, the finance probers doing the peering into both railway and motor carrier finance, etc.). Mr. Gray contends that splitting up a regulatory body into a separate division for each form of transport tends to make each such division a partisan—and hence is an obstacle to equality of regulation. (From force of habit, we almost followed that sentence with "Commissioner Rogers dissents.")

CANADA MERGER: The debate over consolidating Canadian roads has broken out again in Ottawa, but not on the basis of pro and con. Rather the game between the two leading political parties seems to be for each to try to paste the consolidationist label on the other, while disavowing such identification for itself.

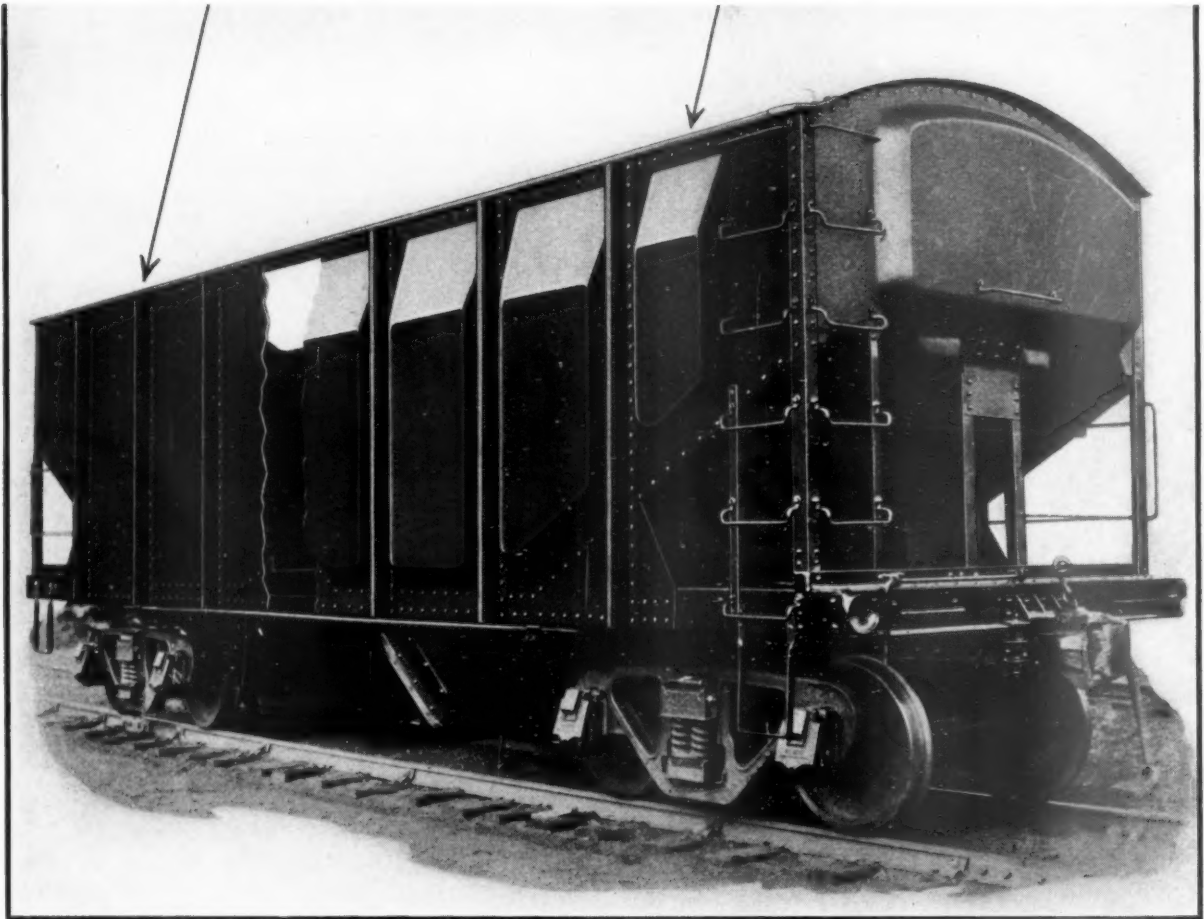
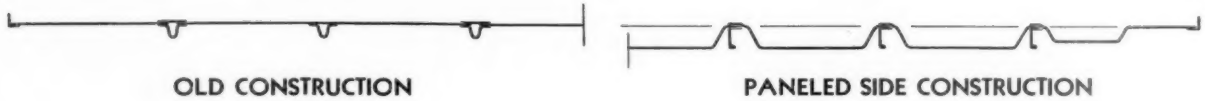
RIVALS COST A BILLION: Traffic lost to rival agencies of transport and to decentralization of industry cost the railroads 523 millions in direct traffic losses in 1937, according to a study issued last week by the I. C. C. Bureau of Statistics. No satisfactory estimate of revenue losses through competitive rate reductions is available, but an educated guess puts them somewhere between a quarter and a half billion. But, of course, subsidized rivalry to the railroad antedates 1928, so the conclusion that politically aided competitors are nicking the railroads over a billion a year is probably unduly conservative.

RAPS INSURANCE: Senator Wheeler this week got out another one of his serial reports on railroad finances (reviewed elsewhere herein)—and in this one he takes a couple of jabs at the insurance companies. Representatives of these companies holding railroad securities were criticized for alleged kowtowing to investment bankers and equity holders instead of vigorously defending their own investments.

HILL & HARRIMAN: If the redoubtable Roosevelt I and the Supreme Court hadn't put a stop to the efforts toward consolidation of Messrs. Hill, Harriman and Cassatt, there wouldn't be any very serious railroad problem today. Such was the contention of country's Merger Enthusiast No. 1—J. W. Barriger of the R.F.C.—at a meeting of the Franklin Institute this week. Barriger contends that the merger efforts of the early 1900's would have given the country strong railroads at much lower capital costs than the present competitive systems have necessitated. Such systems, he asserted, would make possible better service and lower rates—hence strengthening the carriers in meeting competition; and he urges that the Hill and Harriman procedures be re-established.

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The Week at a Glance

SOLE SALVATION: There is only one trouble with the railroads—and that is inadequate net earnings. Therefore the sole test of the genuineness of any plan for railroad "relief" is: *Will it, or will it not, increase net railway operating income.* If it will, it is a constructive plan. If it will not, then it is only a smoke screen—a pretense to fool the public into thinking that something is being done to solve railroad problems, when actually nothing is being done at all. All of Senator Wheeler's wordy reports thus far issued fall into this latter category.

SILVER METEOR: The Seaboard's resplendent new Diesel-electric, stainless-steel coach train is described in detail in an illustrated article appearing elsewhere herein. The train is sold out several weeks in advance and is reported to be grossing well over \$5,000 per trip—exclusive of dining car and bar receipts.

ALL-DREDGE IS ALL WET: At least that is the way organized railway labor feels about the appointment of the T. V. A.'s commerce department head to the I. C. C., replacing the honored and able Commissioner McManamy. Not only are the labor leaders "fighting mad" (so says "Labor"), but they feel that the President has pulled a fast one on them. They conferred with him on this matter and "came away with the distinct impression that Mr. Roosevelt would not disturb McManamy 'for a long time.'" Another legitimate objection to Alldredge, which the labor executives might have cited but did not, is that he is apparently a waterway fan (see *Railway Age*, December 17, page 893) and hence not the kind of guy likely to do much toward correcting injustices being done the railroads and their employees by toll-free waterway competition.

MORE MANACLES: Senator Wheeler's method of extricating the railroads from their difficulties (ascribable, at least in part, to overregulation) is to pile more regulation upon them. This week he introduced a bill (and he promises more like it) to give the I. C. C. snooping powers into all subsidiaries of the railroads and into all equipment and supply houses with which the railroads do business. The bill also would curtail the railroads' power to invest in securities of other companies.

THE PLAYFUL MR. EASTMAN: When he was Co-ordinator, Commissioner Eastman entrusted a study of the extent of truck subsidies to one of his subordinates (who, incidentally, had previously been employed by highway transportation interests and was an enthusiastic partisan of theirs). Others of the Co-ordinator's staff had a hand in the study—but, anyhow, the motor transport fan among their number appears to have been the ablest salesman—because the view predominated among them that, not highway users, but

the hard-pressed general taxpayers should be soaked for the bulk of highway costs. The "impartial" report of these "experts" has been kicking around unpublished ever since—but now promises to be trotted out as "proof" that trucks are subsidized little, if at all. Mr. Eastman appears to have in him a touch of the same Puckish spirit which inspired the President in his Amlie and Alldredge appointments to the I. C. C.

POLITICS' NEXT VICTIM: Political rackets are responsible for subsidies to highways and waterways, and for discriminatory treatment of the railways. If and when the railways fall into public ownership, much of the discrimination against them would probably cease—because experience in other countries has shown that governments do not tolerate much competition with government-owned railways. What other industries will the transportation-dole-getters turn upon, the leading editorial herein asks, when they can no longer victimize the railroads? Are the automotive and oil industries positive that they will not have "yard-stick" trucks and "yard-stick" gasoline, to contend with as the utilities now have "yard-stick" power?

FEATHER BED DEFENSE: The 54 employees of the Washington Terminal involved in the suit of that company against an Adjustment Board award have filed their answer in the District Court at Washington. The suit was brought by the company against an Adjustment Board order requiring it to employ these men to move passenger trains to its yards instead of having the work performed by road crews—the alleged rule requiring employment of unneeded employees, being one of the "feather bed" variety. The defense alleges that the complainant company is entitled to no relief under the Declaratory Judgments Act under which suit was brought.

WHAT WILL TRAFFIC BEAR?: The rates which high-class traffic could stand are not the same in this day of truck competition as they were when the goods either moved by rail or not at all. As yet, however, the rate structure does not seem to recognize the changed conditions—and, on another page herein, is inaugurated a series of short articles which will seek to bring to light some of the costly anomalies of present-day rate-making.

JANUARY REVENUES UP: Freight revenues in January were better than 9 per cent ahead of January, 1938, according to preliminary reports from about four-fifths of the railroads. On the other hand, passenger revenues were lower by more than 7 per cent, the decline being less in the East than in the other two territories. Total revenues were more than 8 per cent higher than they were a year ago.

FUEL RECORD: In 1938 the railroads used 115 pounds of coal per 1000 gross ton-miles, which was the best performance since records began to be kept, 21 years ago. The saving in fuel consumption per unit of performance has been almost one-third since 1920 in freight service and better than one-fifth in passenger service.

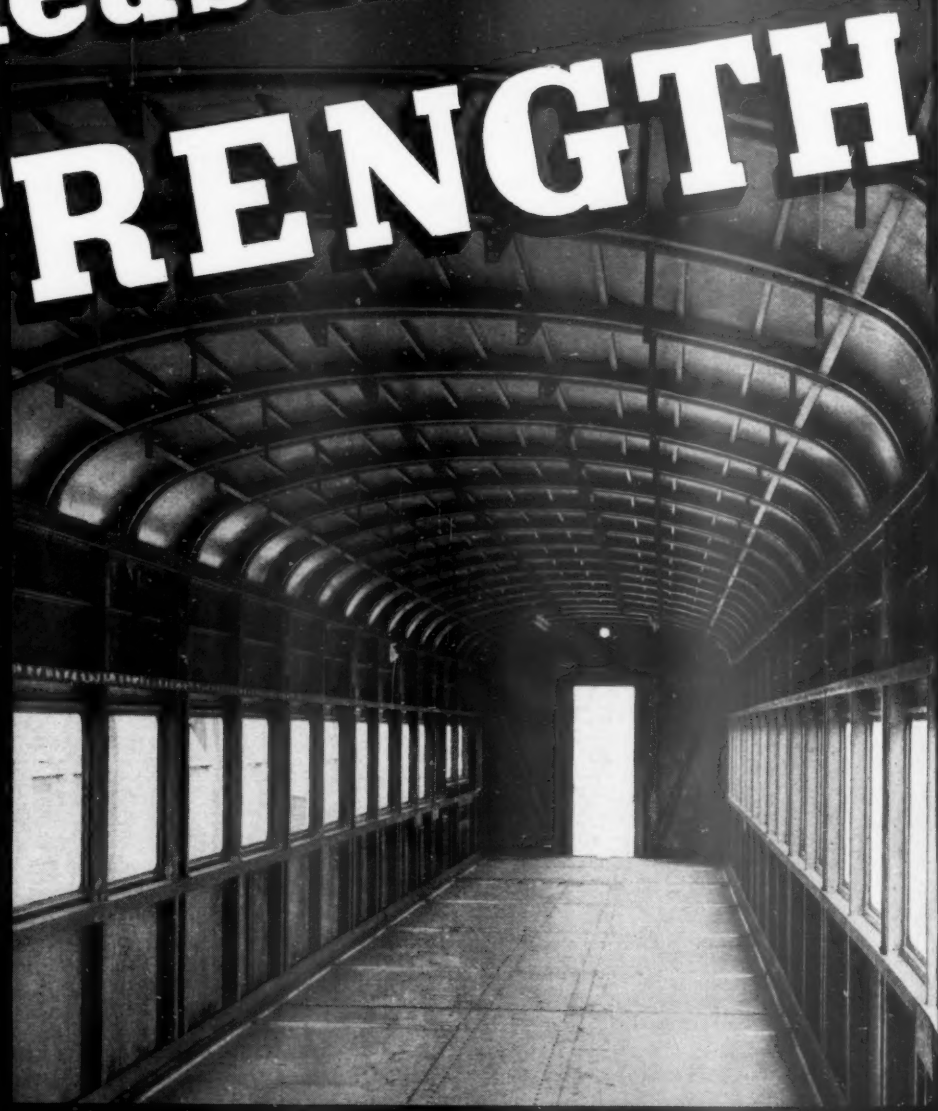
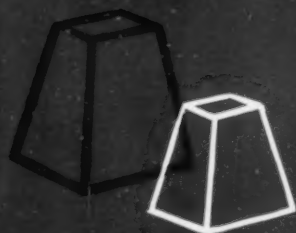
INTELLIGENT SELFISHNESS: Business men are not being asked to interest themselves in the railroad situation because of their love for the railroads, but because of their interest in their own welfare. This point was stressed by the editor of *Railway Age* in an address in Pittsburgh on February 15 in which he pointed out that every industry in the country has a vital selfish interest in preventing the railroads from slipping into government ownership. But industry has been lured away from the protection of this vital interest by the temptation of immediate profits to be gained by utilizing water and truck transportation—largely at the taxpayers' expense.

DENY SUBSIDY: John Lawrence of the American Trucking Associations testified on the Lea bill last week—his testimony being largely a white-wash for the trucking business and an allegation that trucks help rather than harm the railroads. In particular he denied that trucks are subsidized, saying that they paid 417 millions in taxes in 1937 as against 325 paid by railroads. He did not stress the fact, however, that so-called "taxes" paid by trucks include their "maintenance-of-way expenses" as well. Add railroad m. of w. expenses to their taxes, Mr. Lawrence, and then see how your truck industry's tax "burden" stacks up.

MERCHANDISE PIER: The Baltimore & Ohio's new merchandise pier at Philadelphia (replacing one destroyed by fire) is described in an illustrated article herein. A deck of concrete slabs and glass blocks in one wall are among the features of this wholly-modern structure, which handles meats under refrigeration.

10 BILLION SUBSIDY: Heretofore, although every competent observer has long known that highway transportation is heavily subsidized by the general taxpayers, exact calculations of the amount of such subsidies have been lacking. This week, however, authoritative figures on these subsidies became available by the publication of a study on highway finance (reviewed elsewhere herein) by three eminent highway engineers. For example, in the 12 years 1921-32 the total subsidy to highway transportation out of general tax funds was 10 billion dollars—or better than 800 million dollars a year on the average. Getting down to specific classes of vehicles, the average annual subsidy is found to range from \$15 for a passenger automobile up to almost \$2,000 for a heavy truck.

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The Week at a Glance

CARLOADINGS: In the February 18 week, cars loaded totaled 580 thousand, which was an increase of 153 cars over the previous week, but a decrease of 18.5 per cent below the corresponding week in 1937.

DOING RIGHT BY DIXIE: Several Southern Senators have introduced resolutions calling upon the I. C. C. to investigate the rate levels in different territories—their objective being a lower level of rates in the South. Commenting upon these legislative proposals, Commissioner Eastman has written a couple of letters to Senator Wheeler in which he points out that the I. C. C. needs no legislative authority beyond that which it already has in order to investigate the alleged discrimination against Southern shippers. He pointed out that the I. C. C. had two years ago begun an inquiry into Southern class rates at the request of state commissions in the South, but that these latter withdrew from the proceeding and it was dropped.

HEARING FROM HOME: Evidence of enthusiastic "rank and file" support by railway labor of legislation dealing constructively with the railroads appeared last week at hearings on the Lea bill, when several Congressmen disclosed that they had been getting letters from union locals in their districts urging early remedial legislation.

L. V.'s "ASA PACKER": The yellow and black "Asa Packer" of the Lehigh Valley, being one of the most recent examples of what the designer and decorator can do toward making a new train out of any old one, is described in an illustrated article herein. Particularly interesting is the lounge-dining car, which is ingeniously redecorated and refurnished, and equipped with fluorescent lighting.

MILEAGE LIMITATION: Representatives of railway train and engine service employees of junior seniority status appeared before the Lea committee last week and urged legislation to limit the mileage of transportation employees in order to provide for the employment of a larger number of men. The senior men "hold the best jobs, and, aided by modern easy-riding equipment and high-speed schedules, insist that they have a right to stay on the job until the undertaker calls for them," was the testimony of the junior employees' spokesman. He blamed the present condition on the control of grievance committees by senior employees.

RUTHLESS SENIORITY RULES: Railroad employees, continued the spokesmen for the junior employees, have been "graciously and liberally rewarded by dear old Uncle Sam," but they have not shown appropriate gratitude. "All forms of business, including the railroads these senior men work for, have taken shocking set

backs," he said, "but the senior transportation employee will not make one helpful move." He contrasted the 44-hour maximum week of the wages and hours law with the "38 to 60 days per month" which some of the "old heads" are getting in.

HOW TRUCKS COMPETE: It is not the "economy" of motor truck transportation, but a railroad rate structure which has outgrown its usefulness which is enabling trucks to compete with the railroads over distances up to 1000 miles—such is the contention of the second installment of the "What Will the Traffic Bear?" series, appearing elsewhere herein.

FRIENDLY CRITICISM: "If there's something too complicated for the average individual to understand, the damned thing ought to be destroyed." Such was a saying attributed to Andrew Jackson by Congressman Boren of Oklahoma at the Lea Bill hearing this week—and the complexity at which Mr. Boren was complaining was that of the railroad freight rate structure. He went on to explain that he was not unfriendly to the railroad but only to things about them which are not understandable. Maybe Mr. Boren has got something there.

O. & W. "TOWN MEETING": Federal Judge Murray Hulbert on February 20 held an informal hearing in his court in New York to which all the bondholders and patrons of the New York, Ontario and Western were invited—and about 150 witnesses showed up, most of them representing communities served by the road. The court desires an early termination of the trusteeship of the property, but some of the security-holders seem to be in no particular hurry. Anyhow, the hearing appears to have served the court's purpose of arousing community interest in the line, a considerable portion of which may be abandoned if traffic does not improve.

BOUNCING TO THE FAIRS: For bargain-hunters with a lot of time on their hands and who are hardy in that portion of their anatomies which H. L. Mencken used to call the *Sitzfleisch*, the bus companies are offering a trip to the New York and San Francisco fairs for 23 per cent less than the railroads' \$90 coach rate. Indicating, perhaps, that the bus people are rather more skilful at the bargain-basement technique than the railroads, they have quoted their rate at \$69.95, instead of in even dollars.

MONEY-SAVING BOILERS: The Missouri Pacific has abandoned oil fuel and gone to pulverized coal in its new stationary boiler installation at Little Rock, which is described in an illustrated article herein. Two new boilers replace five old ones, and effect a saving of more than 9 cents per 1,000 lb. of steam produced. The shift in the fuel used was based upon increased prices for oil.

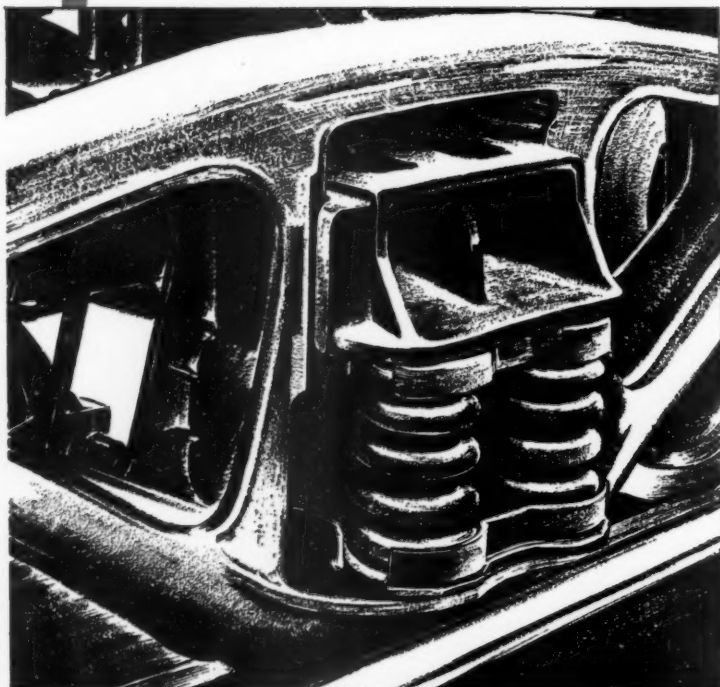
NEW ROUTE TO PACIFIC: Through passenger service between Chicago and San Francisco on the Burlington-Rio Grande-Western Pacific route via Moffat tunnel will be inaugurated on June 10, when the three roads will unite in establishing the "Exposition Flyer." Heretofore, through passenger service on this route has been available only by means of connecting Pullmans, involving some layovers and a total time of about 80 hours. By contrast, the new train will have a 57-hr. schedule westbound and a 60-hr. schedule eastbound, and will offer to transcontinental travelers some scenic attractions heretofore not so easily available.

AN "IMPOSSIBLE" ACCIDENT: There have been many railroad wrecks arising from a train of events which, one would think, could never in a millenium just happen to follow each other in such an unhappy order as to cause fatalities. Among such accidents that would be hard to believe if evidence were absent, the collision which occurred last Saturday on the Great Western must be rated as one of the oddest. The details are given in brief in a news item herein—but some kind of jinx is needed to explain how a switched car failing to couple could set in motion the succession of events which put the engine out on the main line under steam to collide with a passenger train.

WORSE THAN AMLIE?: The T. V. A.'s gift to higher thought on transportation questions—J. Hayden Alldredge, nominee to the I. C. C.—in testifying recently on the T. V. A. appropriation, elaborated further his views as to inland waterway development. The purpose of the inland waterways, in the view of this great man, is to bring to the interior the advantages of "cheap" transportation, which Nature has thoughtlessly provided for the seaboard alone. In the long run, according to his analysis, such waterways may increase total commerce sufficiently so as not to injure the railroads. In short, Mr. Alldredge is in favor of inland waterways first and the faulty reasoning which he has to resort to in their defense causes him no qualms.

AFRAID TO FACE FACTS: Many a man with a serious disease which can be cured only by a major operation has pretended to his friends that he is curing himself while he does nothing but swallow large doses of Dr. Quack's Magic Medicine—Cures All Ills of Man or Beast. This is precisely the weak-kneed course that politicians and business men are following, the leading editorial herein asserts, when they pretend to "solve the railroad problem" by some painless alteration in the methods of financing or regulating the railroads. The disease of the railroads is the lack of net revenues—and any "cure" which will not immediately and appreciably increase such revenues is pure quackery.

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The Week at a Glance

U. S. SPEED KING: Over half of the 93,000 daily miles which trains run at speeds higher than 60 m.p.h. are operated in the United States. This fact is disclosed in a survey made by the British publication, the Railway Gazette, which is reviewed in the news pages elsewhere herein.

DIXIE GETS A BREAK: With sundry Southern solons offering bills in Congress to end rate "discrimination" against Southern producers, Commissioner Lee and Examiner Corcoran of the I. C. C. have issued a proposed report which goes a long way in support of the Southerners' complaints. The South-North rates on many commodities are higher than those for similar movement in official, and the Lee-Corcoran report finds "undue prejudice" in the situation.

THE BOOM RETURNS: Unfortunately, the kind of boom we refer to is the kind that one falls down and goes. The boom, in other words, is not in earnings, but in taxes—they were higher per mile of railroad in 1938 than they were in the relatively prosperous decade ended 1929. Some tax comparisons are given in an editorial herein. Gross earnings in 1938 were about equal to those of 1916—but in 1916 taxes were only \$637 per mile, while in 1938 they were \$1,463. Taxes last year were about the same as in 1925, but gross earnings in 1925 were twice as much as last year.

WHY A NEW RATE RULE?: The railroads need a revision of the rate-making rule because, the way it is now written, when business is good they are told that they don't need the money which favorable rates would yield and when business is bad they are told that low rates are in keeping with the general economic trend. Such was the testimony of R. V. Fletcher last week at the Lea bill hearing, where he explained and defended the recommendations of the Committee-of-Six. Judge Fletcher also argued in favor of a "Transportation Board" rather than an "Administrator" as a planning agency independent of the I. C. C. Experience with the Co-ordinator, said the Judge, has given the railroads no enthusiasm for the re-establishment of such an official.

AREN'T WATERWAYS SACRED?: No one can ever guess how it happened, but a report came out from the Army Engineers last week which recommended that a 200-million-dollar canal be built to connect the Ohio river with Lake Erie, and they added the information that a slight reduction in freight rates would remove the economic justification for the project. The President sought the advice of his uncle, Frederic Delano, of the National Resources Board, on the project—and it wasn't very favorable either; and now the President has asked the I. C. C. to examine into rates and the adequacy of existing transportation facilities in this area. We have devoted the leading editorial

herein to this momentous event—which, as far as we can learn, is the first occasion in recent history when a waterway promises to be weighed on its actual merits.

THE CLEVER I. C. C.: Rock Island attorneys this week took a crack at the I. C. C. for its order in the Rock Island's Texas line merger petition, wording its finding in such a way that the railroad cannot take it into court and find out whether or not the I. C. C. is overstepping its authority. The Commission authorized the merger with a provision to protect the jobs of employees who otherwise might be dismissed.

LOCOMOTIVE JUMPING: High locomotive speeds are bringing new problems for the designers—one of which is the jumping of the driving wheels of some engines when slipping at high speeds, with injurious effects on the rail. The engineers of the Timken Roller Bearing Company have conducted extensive tests in this field and their findings are presented in a paper published in this issue.

S. F. TUNNEL RELINED: A tunnel on the Santa Fe near San Francisco which had given plenty of trouble in maintenance has had its lining repaired by the "intrusion" process; and other improvements have been made which will mitigate the problems to which it has given rise—details of the job being described elsewhere herein.

JANUARY N. R. O. I.: In January the railroads earned net railway operating income totaling slightly under 33 million dollars which was almost 26 millions more than they earned in January last year. The annual rate of return on the basis of January earnings was 2.4 per cent, as compared with almost 2.7 per cent in December. That is to say, on the basis of January earnings the railroads would earn about 625 million dollars of net railway operating income this year, whereas, if net earnings were to be at the level attained in December, the annual income would be about 700 millions.

NIT LEAGUE SAYS NO: No regulation of water carriers, no change in the rate-making rule (which might give traffic managers fewer arguments for rate reductions), no tampering with the powers of the I. C. C.—such was the gist of the stand the Nit League took at its Washington meeting last week. In other words—chaos suits them fine; why should they help to end it? Should the traffic manager worry if business in general goes to pot because of unsound policies—as long as he can make his boss think he is good by showing reduced rates on the tonnage he moves? If bad business gives him little tonnage to move, that is the sales department's worry—not the traffic manager's. (We do not include in these observations the large minority in the League which did strive to induce it to view the situation realistically and constructively).

PEACE, IT'S WONDERFUL: The Department of Commerce, which in 1934 reported that the Florida Ship Canal was not justified on the basis of its prospective benefits to shipping, has now changed its mind—giving you a rough idea of the kind of judgment one gets when the judges are in executive departments and hold their jobs at the pleasure of the Administration. Not that the Department has no factual basis on which to hang its reversal (in the present instance it cites an increase in Gulf port commerce in 1937 of 100 per cent over 1931)—all the same, how is a body to know whether it is a considered opinion or the love of the office-holder for his job which decides what justice is in a case like this?

BENEFITS FOR WHOM: The Commerce Department okays the Florida canal because of its benefits to shipping—and it decides that shipping will benefit because its traffic has increased 100 per cent in six years. Well—general business wasn't any 100 per cent better in 1937 than it was in 1931, and that means that the Gulf vessels got their 100 per cent increase largely at the expense of the railways. So, because they were so successful in diverting tonnage away from the railroads, the Department of Commerce says, in effect, "Subsidize them with a 200-million-dollar canal so they can take still more tonnage away from the railroads."

EXPRESS CENTENARY: The express business is 100 years old today; and a transcontinental radio hook-up will commemorate the event with a broadcast from the San Francisco fair. Our contribution to the occasion takes the form of two articles in this issue—in one of which we present a quick glance at the industry from an historical standpoint; in the other we record some of the Express Agency's outstanding recent accomplishments in several of its major departments.

EXPRESS RATES: The I. C. C. has given the Express Agency a centenary birthday present in the form of an adjustment in the rate structure which the Agency believes will yield it \$10,000,000 of additional revenue. Commissioner Eastman dissented (and Dissenter Rogers joined him) on the grounds that he knows more about what rates will not make money for the Express Agency than the Agency's own officers.

HELPFUL HARRY: The Secretary of Commerce made a speech last Friday at Des Moines in which he declared himself in favor of "rehabilitating" the railroads. He also took a poke at pressure groups, stating that government action in the interest of any group "can only be justified when it is in the general public interest." Amen, Mr. Secretary—and if you can enforce that doctrine in Washington, you won't have to worry about the rehabilitation of the railroads. That will take care of itself.

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Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

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The Week at a Glance

ENG. CONVENTIONS: With a bow to the meetings of the engineering and signaling officers who convene in Chicago next week, we are publishing herein articles and editorials of particular interest to them—and, in addition, our own World's Fair in Print of interesting new devices and appliances designed to improve performance in these branches of railroad work.

SHIPPERS NOT "THE PUBLIC":

There can be but one justification for government intrusion into transportation—viz., that its invasion will protect the public interest better than private enterprise would if the government stayed out. A very good theory, but, as the leading editorial herein points out, the history of government intrusion into transportation has consisted largely of actions—not to promote the general public interest, but to hand out favors to this, that and the other group of shippers. As far as the public interest goes, what difference does it make to the taxpaying citizen whether "robber barons" get his money or if favored shippers and government contractors get it? The citizen holds the bag in either case.

DETECTING DEFECTS: Ordinary block signals protect against other trains, but not against falling rocks, fire and flood damage to bridges and other such perils which have caused a number of accidents in recent years. Special detector devices, however, can be installed (as an editorial herein points out) which will give warning of these non-traffic dangers—and several such are enumerated, including one which will give warning against dragging brake rigging.

BOOM IN M. OF W.?: Rail orders already placed or in prospect indicate that twice as much rail will be bought in 1939 as was acquired during 1938 (orders already placed are 25 per cent ahead of those for the entire year 1938). An editorial herein reviews the year's prospects in the various classes of maintenance work and reaches the conclusion that activity this year will approach that of 1937—which was the busiest year in this department since 1931.

COLORADO WISDOM: "All a man needs is a boat and he's in the water transportation business; all he needs is a truck or a bus and he is in the motor transportation business—everything else is furnished him free." That was how Representative Martin of Colorado explained the competitive problem of the railroads at the Lea bill hearing this week—and who else has done the job so clearly and in so few words?

BRITISH TRUCKERS ARE

SPORTS: In sharp contrast to the competitors of the railways on this side of the Atlantic, who insist upon the hog-tying of the railroads by such restrictions as the long-and-short-haul clause from which they

are exempted, the British truckers have agreed to support the railways in their "square deal" campaign. Truck rates in Great Britain are not regulated (although operators have to get certificates) and the truckers have agreed to support the freeing of railway rates from regulation too. Cricket is a wonderful game—we wish our truck and waterway friends could be induced to take it up.

LOCOMOTIVES EARN 50%: The Union Pacific's twenty 4-8-4's acquired in the fall of '37, last year averaged 15,000 miles each, and saved \$301,000 in maintenance compared with the locomotives they replaced. The high capacity of the locomotives also made possible a reduction of 1¼ million train miles. Altogether their savings yielded a return of more than 50 per cent on the investment—the details being given in an illustrated article elsewhere herein.

FILIBUSTER THREAT: Southern solons who have stirred themselves into indignation over alleged rate discrimination against the South are threatening to filibuster against the passage of any railroad legislation unless and until Congress takes steps to end the rate conditions at which they complain. This, in spite of the fact that it has been quite clearly established that the I. C. C. already has power to remove such discrimination as may be found to exist.

GRADE CROSSING PROGRAM:

The progress of the program for the removal or protection of grade crossings at the expense of the federal government is surveyed in an illustrated article in this issue. Altogether, 702 structures had been approved at the end of January (some of them, of course, eliminating more than one crossing). A total of 706 crossings had been provided with protective devices and 169 had been eliminated by highway relocation.

GOV'T. TRUCK PROPAGANDA:

The group of propagandists for truck manufacturing and kindred interests, known as the Highway Users Conference, has supporters in the Department of Agriculture—judging from a report got out this week by that department. Purporting to be a study of "Barriers to Internal Trade in Farm Products," the report nevertheless gives evidence of bias on controversial matters by looking with favor upon granting license reciprocity to out-of-state trucks. In other words, making a truck pay road taxes in a state whose highways it uses is suggested as a "barrier" to trade. The report also scowls at ports-of-entry and says that some state limits on truck sizes and weights "place a heavy burden on interstate commerce." The report is quite candid about the source of its inspiration—acknowledging "co-operation of great value" from the Highway Users Conference and the American Trucking Associations, listing propaganda publications of these groups.

RATES TO ATTRACT TRAFFIC:

Truck inroads into railroad traffic are continuing—is the contention of this week's installment, No. 4, in the "What Will the Traffic Bear?" series. As proof, statistics are cited which show railroad l.c.l. and miscellaneous traffic up less than 5 per cent in December while truck loadings were up over 22 per cent. Pricing which meets modern competitive conditions, the installment contends, would bring back a lot of this traffic to the railroad.

BLAND BILL BACKFIRE:

The Bland Bill to put water carriers under regulation of the Maritime Commission is nothing but a backfire measure to safeguard these carriers against the possibility that they may be regulated by the I. C. C. Such was the explanation offered by Chairman Bland of the House Merchant Marine Fisheries Committee who authored the bill. At the hearings on the measure this week, stooges for the water lines and shippers who enjoy their subsidized services appeared and expressed fears that, if the I. C. C. got jurisdiction over river rates, it would boost them.

CHILDE-ISH REASONING:

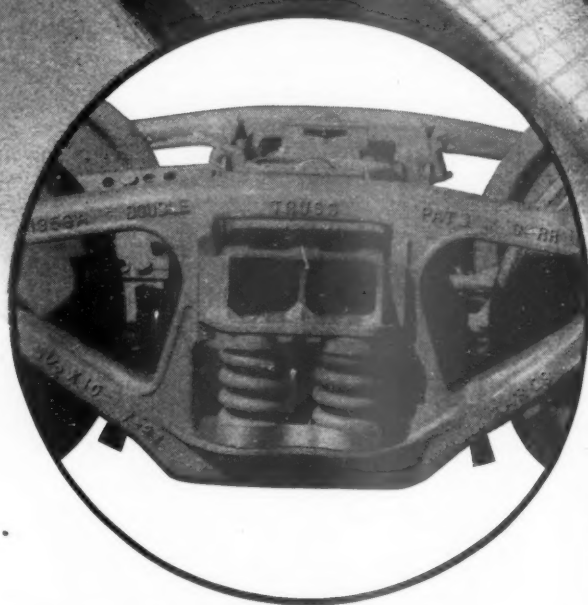
For a sample of economic analysis which is downright quaint, we recommend to our customers the report published herein of the testimony on the Lea Bill by C. E. Childe, chairman of the traffic committee of the Mississippi Valley Committee. He maintained that waterways are "inherently" the "cheapest form of transportation"—being so, in part, because the government provides the channels; a statement which not only measures the gentleman's depth as an economist, but also suggests that some friend ought to tip him off as to the meaning of "inherently." Heretofore it had seemed to us that Hopes-to-Be-Commissioner Alldredge was tops in thinking up defenses for the waterways, but he is an amateur compared to this one.

SIX-COMMITTEE BILL: Chairman Lea on March 8, introduced in the House a bill which embodies the rewriting of the Interstate Commerce Act as recommended by the President's Committee-of-Six, the bill being given the number H. R. 4862. Senator Wheeler is expected to introduce his own bill in the senate—a measure somewhat less comprehensive than the house bill. Meantime, there is a good deal of defeatist talk going on around the Capitol to the effect that the only railroad legislation which has a chance at this session is that of the innocuous and non-controversial variety. This is a good technique to defeat legislation if enough people can be persuaded to believe it. Against this "Whisper of Death" may be cited Chairman Lea's hopefulness of legislation at the present session and the disposition of railway labor to "go to town" in behalf of the Six-Committee recommendations. The NIT League's complacency at the status quo is a major deterrent to optimism.

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The Week at a Glance

PUTS FINGER ON A. A. R.: Congress should direct the I. C. C. to regulate through routes, joint rates, car service, rate divisions and other such matters over which its jurisdiction now is optional—was the advice Trustee Patrick Joyce of the C. G. W. gave at the Lea bill hearing this week. These matters, said Mr. Joyce, are now left to the A. A. R.—but this association in his estimation has “failed to bring about any improvement in the railroad situation.”

MUD CREEK TRAFFIC EXPERTS:

The prima donna stooges for dole-supported transportation having previously completed their testimony against the Lea Bill, the hearings this week were turned over largely to the small fry. Every paid official of every Turtle Creek Inland Waterway Association in the country, of course, has to take the time of the committee to put in his own “me-too” testimony so he can go back and show his dues-paying members that he is a “fighter” and can “tell them.” If these frog pond navigators had to qualify for their jobs by an examination in elementary economics, there wouldn't be many waterway witnesses.

FAIR FARE UNFAIR?: The railroads' bargain rate of \$90 for a trip to both the New York and San Francisco fairs is a mere piker's offering, in the view of Fare-Postalizer Hastings. According to the latest revision of his scheme, outlined in the news pages herein, a traveler from Atlantic tidewater could go out to the Golden Gate and home again for \$25—less than a good hotel would charge him per week for a room, while moving him nowhere.

RATES UP 123%, PRICES 23%: One reason why some shippers “decentralize” or turn their tonnage to trucks and forwarders is indicated in the fifth installment of the “What Will the Traffic Bear?” series, published in this issue. This reason is that, since 1915, some rates are up over 100 per cent while the prices of the commodities shipped are up only 23 per cent on the average. Rates so much higher in relation to the value of his products goad the shipper into seeking a “way out.” The same freight rate structure, which puts the shipper on the prowl for lower rates, also gives him what he is looking for by providing a wide rate spread which gives the forwarder and the truck a chance to come in.

15% TRAFFIC LOSS TO RIVALS: Railroad freight traffic today would be 15 per cent greater than it is (without any increase in national production), except for the traffic which rival agencies of transportation have taken away from them. This is the conclusion reached by Col. Leonard Ayres, economist for the Cleveland Trust Company, in a statement issued this week. If you add the rate reductions these competitors have occasioned on top of this 15 per cent in actual tonnage they have

taken—it is pretty clear that, except for these competitors, there wouldn't be any “railroad problem” worthy of the name. And, of course, if it weren't for the political assistance these competitors have received, their rivalry of the railroads wouldn't be very severe. So that gets the “railroad problem” right back to where it started from—namely, with the politicians.

TENN. “APPEASEMENT”: Just as Mr. Hitler has marched triumphantly into Czechoslovakia, so 12-ton trucks will now roll victoriously over the borders of Tennessee and onto its highways. A pioneer in preserving the democracy of the highways, by restricting them to vehicles of the relatively moderate size of 9 tons, Tennessee has at last yielded to the trucking industry's demands for self-determination, and has granted it an “anschluss” with Tennessee's highway system to the extent of ceding it 3 more tons. As a face-saving gesture for the state, truck taxes were increased moderately, to maximum of \$225 for the largest vehicles.

STEAM OR DIESEL?: 17 barrels of oil in a Diesel-electric locomotive would haul a train at 80 m.p.h. from New York to Boston (229 miles), while in a steam locomotive, the same amount of fuel would take the train only to Bridgeport (56 miles). With these provocative figures L. K. Silcox opens his discussion of the comparative merits of steam and Diesel motive power, published herein. He goes on to point out, however, that thermal efficiency, wherein the Diesel excels, is not the only efficiency there is; there is also the efficiency of investment capital, and other factors besides, to be taken into account.

CAPITALISTS' “PRIVILEGES”: Critics of the Nazis claim that Herr Hitler has abolished private property in everything except the name. Well, take a look at what our own Fuehrers have done to the railroads. Railroad taxes in 1938 were almost a million dollars a day—while the daily return to railway owners was less than a goose egg by almost $\frac{1}{2}$ million dollars. A pleasant business it is, owning a railway—you have the fun of passing out plenty to the tax collector and you get less than nothing for yourself. (Details are divulged in an editorial herein.)

PROFITS IN L. C. L.: Though the figures show that l.c.l. on the average is unprofitable, specific merchandise trains, nevertheless, are making good net money. This fact is brought out in an editorial herein—which points out some of the operating and sales methods which have taken such services out of the red. One such is the separation of the l.c.l. and carload solicitation staffs—a carload man cannot succeed in developing l.c.l. business if he takes it on merely as a fill-in job, to do when he hasn't any carload business to go after.

WAR TRANSPORT SHORTAGE:

America's transportation system is not prepared for war duty—Col. C. D. Young told the Shippers Advisory Board at Columbus on Tuesday of this week. The railroads' supply of cars and locomotives is down 25 per cent since '29, he explained, and a return of 1929 traffic (which a war would surely bring) would mean an equipment shortage. Trucks, he said, could not take up the slack because in war we need all our man-power and truck transport takes too many men.

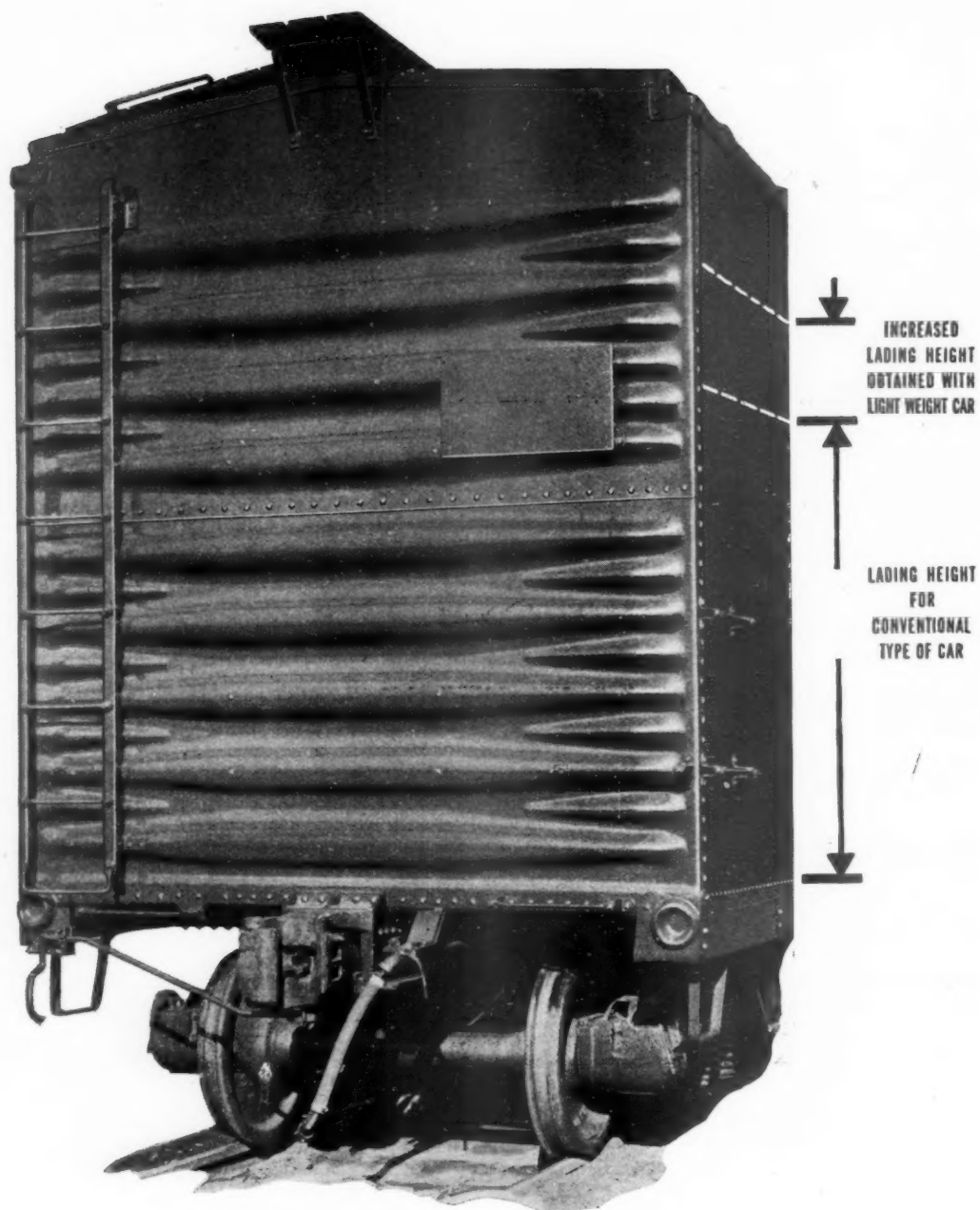
CANADA RAIL PROBE: Canada's Senate has begun another railway investigation such as it held last year, only this time the purpose is to explore the extent of “co-operation” between the railways, rather than the pros and cons of mergers.

“JERSEY JUSTICE”: The Supreme Court has refused to review the New Jersey railroad tax cases, in which state and lower federal courts refused to grant any relief from the heaviest burdens of taxation levied on railroads anywhere in the country. So one more Jersey railroad is going to have to ask its bondholders to take the rap—the C. N. J. now having under way negotiations with these security-holders for a voluntary readjustment of their claims.

SLOAN ON RATES: The Katy's chief executive made a speech at St. Louis last week which has got a lot of people to talking—its high lights being reviewed on the news pages herein. He called the present railroad pricing system “grotesquely out-of-date” and urged many fundamental changes, among them “trainload, flat carload, agreed rates—almost any kind of rate that is in use anywhere in the world.” There is a lot that the railroads can do for themselves, he added, while they are awaiting for Congress to enact necessary legislation.

DOLES FOR BIG BUSINESS: Representative Mapes of Michigan this week brought into the Lea bill hearing a letter from an independent oil jobber, who pointed out that the big oil companies use the waterways but deliver their product at the f.o.b. price plus the railroad freight rate. Thus the “little fellow” gets no benefit from the “cheap” transportation provided by the waterways—and neither does the consumer. The “saving” goes into the jeans of the big corporations.

CROSSING DEATHS OFF: In 1938 people killed in grade crossing mishaps totaled 1,517—which, except for 1933, was the lowest total for any year since 1915. The decrease was 358 under 1937 and 269 under 1936. The high point in crossing accidents was 1928, when 1,051 people lost their lives—almost 70 per cent more than in 1938. If crossing accidents last year had been as numerous in proportion to automobiles as they were in 1921, almost 5000 people would have lost their lives from this cause.



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CHICAGO

The Week at a Glance

'38 WAGES AT PEAK: In 1938, when railway owners experienced their most disastrous year (excepting only 1932), railway employees who were fortunate enough to hold their jobs enjoyed the highest pay in railroad history—\$1,820 being the average. The average wage per hour was almost 75 cents, or 12 per cent more than at the peak of national prosperity in 1929.

NEW TRAIN SLOWED UP: The "Exposition Flyer"—new Chicago-San Francisco train to be operated by the C. B. & Q., the D. & R. G. W. and the Western Pacific via Moffat tunnel—has had its proposed westbound schedule lengthened from 57 hours to 59 hours, 55 minutes, as a result of a protest of competing lines; and an understanding that trains with schedules under 60 hours would charge extra fare.

B. OF R. T. "CO-OPERATES": In furtherance of A. F. Whitney's policy of playing ball with nobody, the B. of R. T. this week had its Washington lawyer before the Lea committee to knock that part of the Committee-of-Six report which urged fewer obstacles in the path of consolidation.

MARTIN SCORES AGAIN: Representative Martin is maintaining the jealous admiration of this department for his ability to expose a complex fraud in a simple phrase. This week at the Lea bill hearing he called attention to all the waterway proponents' contention that water transport is "inconsequential," and asked: "How much is a thing worth that isn't worth anything?" Water transport, he added, cannot be both "inconsequential" and at the same time the "economic life preserver of the nation."

TAX-PAID PROPAGANDA: General Ashburn appeared at the Lea Bill hearing last week with a propaganda movie showing in a favorable light the operations of the Federal Barge Line. This movie cost \$2,500 of taxpayers' money. Ashburn also disclosed that he has a propagandist on the Barge Line payroll, drawing \$5,300 a year of our money, who spends his time trying to keep the public sold on the Barge operation. Nice work—using taxpayers' money to propagandize the taxpayers to continue their shelling out.

ASHBURN DISCOMFITED: Ashburn claimed his barges made a "profit" of \$1,115,000 in 1938—and made a disparaging contrast to the ratio of profit to gross the railroads were able to show. At this point Representative Wolverton went to work on the General's "profit"—pointing out that interest on the barge line investment should be charged at $\frac{3}{4}$ million, taxes at \$140,000 and that some of the barge lines "profit" came from the sale of government bonds and interest on such bonds, for which it had paid nothing. Mr. Wolverton cited some more expenses which the Barge Line, if it used the honest accounting methods of private business, would have had to

charge—and, when he got through, the "profit" had vanished into an ignominious deficit, with nothing said at all about the barges' toll-free use of tax-built channels.

SORRY: On this page in last week's issue we pointed out that 1938 had fewer grade crossing fatalities than any year since 1915, with the exception of 1933. We also drew attention to the fact that 1928 marked the high point of crossing deaths—which was true, but we slipped up in giving the total killed in that year. The number who lost their lives in 1928 was 2,568—which was 1,051 (70 per cent) more than in 1938.

DEFERRED MAINTENANCE: The railroads have reported to the I. C. C. that they had almost 300 million dollars of deferred maintenance at the close of 1938—assuming a traffic as large as that of 1937 to be in prospect. The report is summarized in an article herein, the Bureau of Statistics stating that the totals "must be taken as conservative"—adding, nevertheless, that "the physical condition of the carriers generally is good in matters affecting the safety of train operation." An editorial points out some weak points in this survey, and concludes that the report considerably understates the amount of maintenance work which needs doing on the railroads.

CORPORATION DOLE: The House Rivers and Harbors Committee will begin hearings on March 28 to decide whether to spend over 200 million dollars of taxpayers' money on the Beaver-Mahoning Canal to provide below-cost transportation for a few rich corporations able to ship in 5000-ton quantities; and, incidentally, to add to railroad unemployment and bankruptcy. Let not thy left hand cease to destroy the railroads as fast as, or faster than, thy right hand can save them—such seems to be the transportation policy of the Federal government, and of a large element of American business.

SALVATION BY WHEELER: The Chairman of the Senate Interstate Commerce Committee and Senator Truman introduced in time for the Monday morning newspapers, their bill to save the railroads by toughening up the reorganization procedure—(as if a change in undertakers' technique could cure a sick man).

UNCLE CASPAR: In place of the leading editorial in this issue, we present an innovation—a story of an old man who has been an invalid for 10 years, during which time he has refused to call in a competent doctor, but instead has medicated himself with rabbit's feet and snake-oil. The old fellow knows that this magic medicine is doing him no good, but he is afraid to call in a real physician because the suppliers of rabbit's feet and snake juice might take offense. The hero of this story (which, incidentally, is at least partly true) is not Cartoonist Webster's famous character, Caspar Milquetoast, but a man who is even more widely known.

ARMY ENGINEERS: "Theirs not to reason why, theirs but to dig or die"—seems to be the slogan of the Army Engineers. Or such, at any rate, is the inference we draw from the remarks by Major General Schley this week before the Rivers and Harbors Congress, reported in the news pages herein. What invaders do these navigators expect to repel on the upper Missouri—the Blackfeet maybe?

EQUIPMENT VS. TRACK: There is a limit to the amount of punishment which existing track will take from equipment not designed to meet its limitations. In harmonizing the track and the equipment, the railroads may make a choice between spending unknown sums to provide track which will stand almost anything, or spending known amounts on equipment designed to meet track conditions. This is the way the problem is presented by H. R. Clarke, Q engineer m. of w., in a paper published in this issue. "I disagree very decidedly," says Mr. Clarke, "with articles which have been published on this subject by some mechanical engineers." He lists more than a half-dozen different types of rail damage, distinguishing between those caused by locomotives and those ascribable to track conditions.

A MECH. DEPT. VIEW: Some of the problems faced by the mechanical engineer in overcoming the conditions which Mr. Clarke describes are discussed in another paper herein by Kenneth Cartwright of the New Haven. He goes thoroughly into the problem of locomotive balance and concludes that, for high speeds, if a 4-6-4 isn't big enough, a 4-4-4-4 will prove a better design than a 4-8-4.

CLERKS VS. ECONOMY: The Brotherhood of Railway Clerks has asked the I. C. C. to make the Railway Express Agency quit dividing its revenues among railroads in accordance with a simplified formula which reduces the volume of bookkeeping.

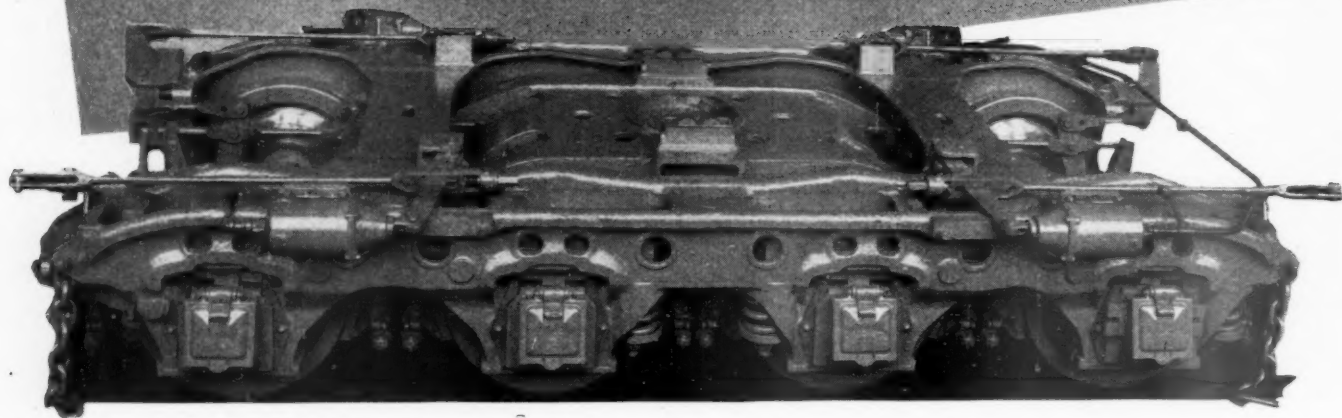
THE RED MENACE: The crimson terror in this case is ink—which the railroads used to mark up a net loss of almost 123 millions as a result of 1938's disastrous operations. The gruesome details are given in an article elsewhere herein, which shows selected income and balance sheet items for the carriers as a whole, and the most significant income items by individual roads.

I. C. C. PUTS OAR IN: The I. C. C. has filed its opinion on proposals for railroad legislation with Chairman Lea of the House Interstate Commerce Committee, a brief summary being given elsewhere herein. In general, the Commission is not in favor of releasing any of its strangle-hold on the railroads—either by a new rate-making rule, or by long-and-short-haul clause repeal or by lightening the reparations provisions. It favors a "transportation authority," to be named for only a short period, however.

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Four brake cylinders are located on each truck frame . . . a construction that permits free movement of trucks. Insures safe and dependable operation.

Simplex Unit Cylinder Clasp Brakes are designed to produce efficient braking and rapid deceleration, and are standard for new power and equipment.

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INLAND 4-WAY FLOOR PLATE is now being adopted by leading railroads because (1) it provides safe traction for foot or wheel in all directions, (2) withstands years of hard wear without repair costs, (3) is easily kept clean and drains quickly, and (4) makes an attractive, continuous floor pattern.

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It illustrates the reasons why INLAND 4-WAY FLOOR PLATE is better suited to railroad use than any other flooring material.



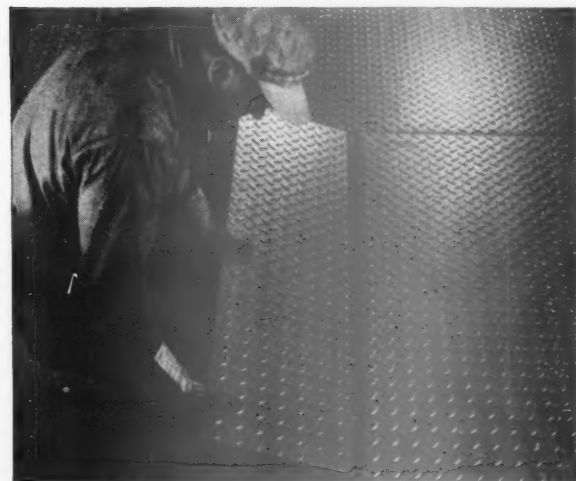
SHEETS STRIP TIN PLATE BARS RAILS TRACK ACCESSORIES PLATES FLOOR PLATES
STRUCTURALS PILING REINFORCING BARS

INLAND STEEL CO.

General Offices: 38 South Dearborn Street, Chicago, Illinois • Offices in: Detroit-Kansas City-Milwaukee-St. Louis-St. Paul

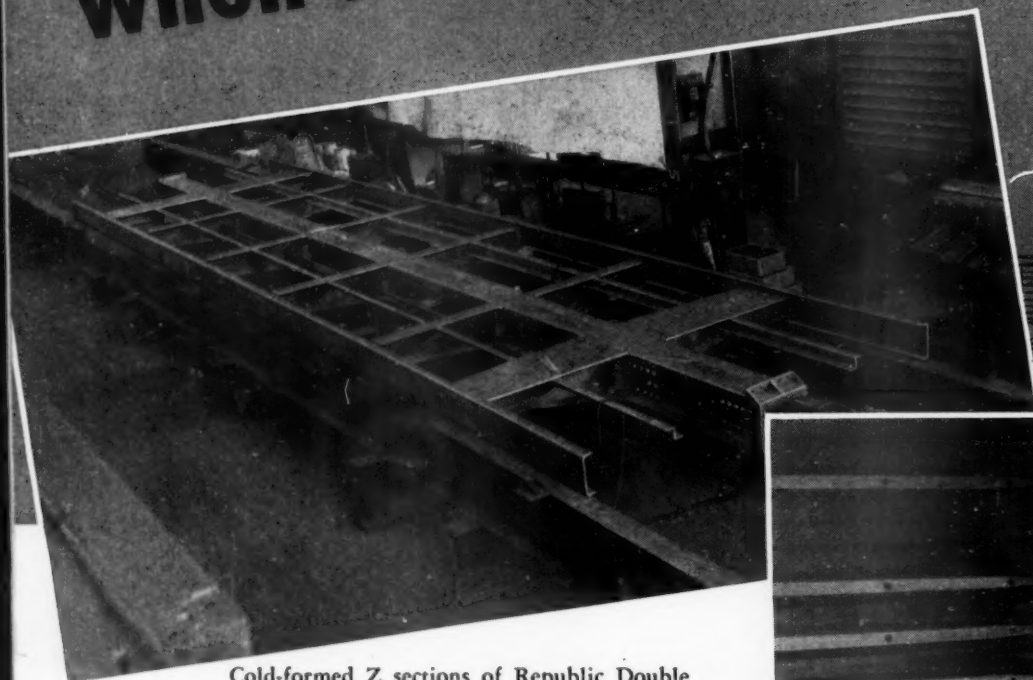


Safe traction for foot or wheel in all directions, comfortable to walk upon and easily kept clean.

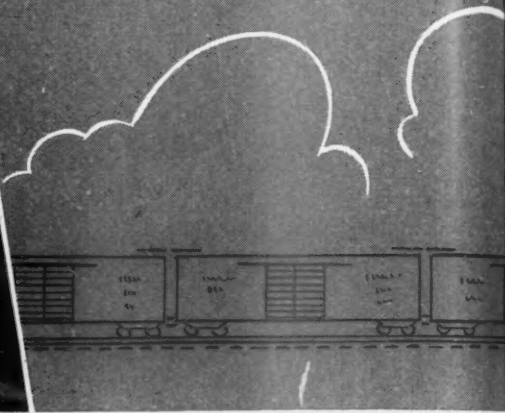


4-Way matching makes an attractive floor of unbroken pattern, which can be easily laid without waste.

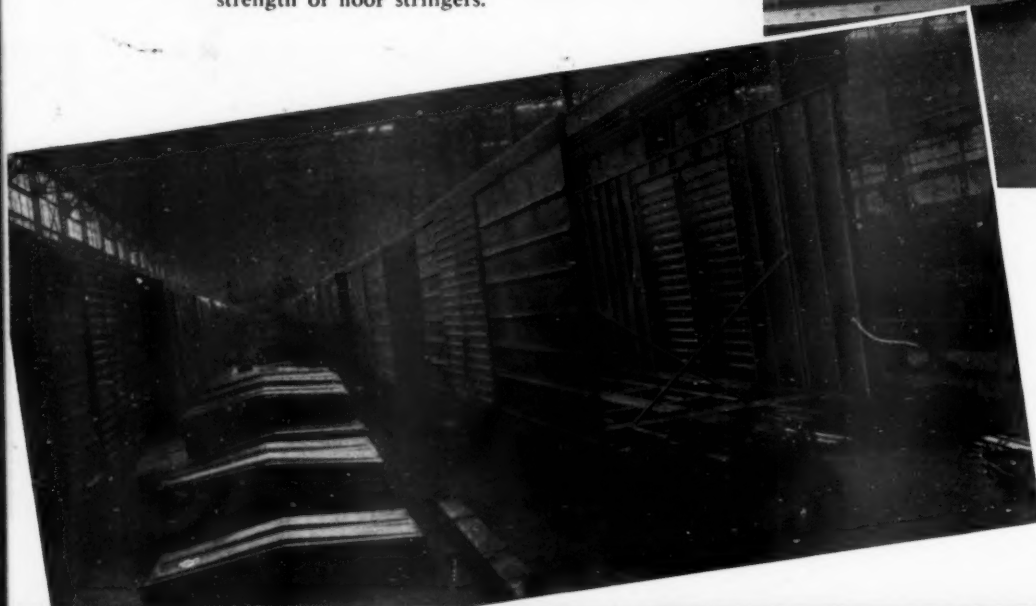
Follow the modern trend when building new equipment —



Cold-formed Z sections of Republic Double Strength Steel reduce weight and increase the strength of floor stringers.



Specially designed cold-formed Z posts of Republic Double Strength Steel facilitate assembly of side walls and the inner linings.



Floor stringers and side posts with specially designed cold-formed side walls of Republic Double Strength Steel in place.

Note specially designed cold-formed side plate section extending entire length of car. This is also Republic Double Strength Steel.

REPUBLIC STEEL CORPORATION

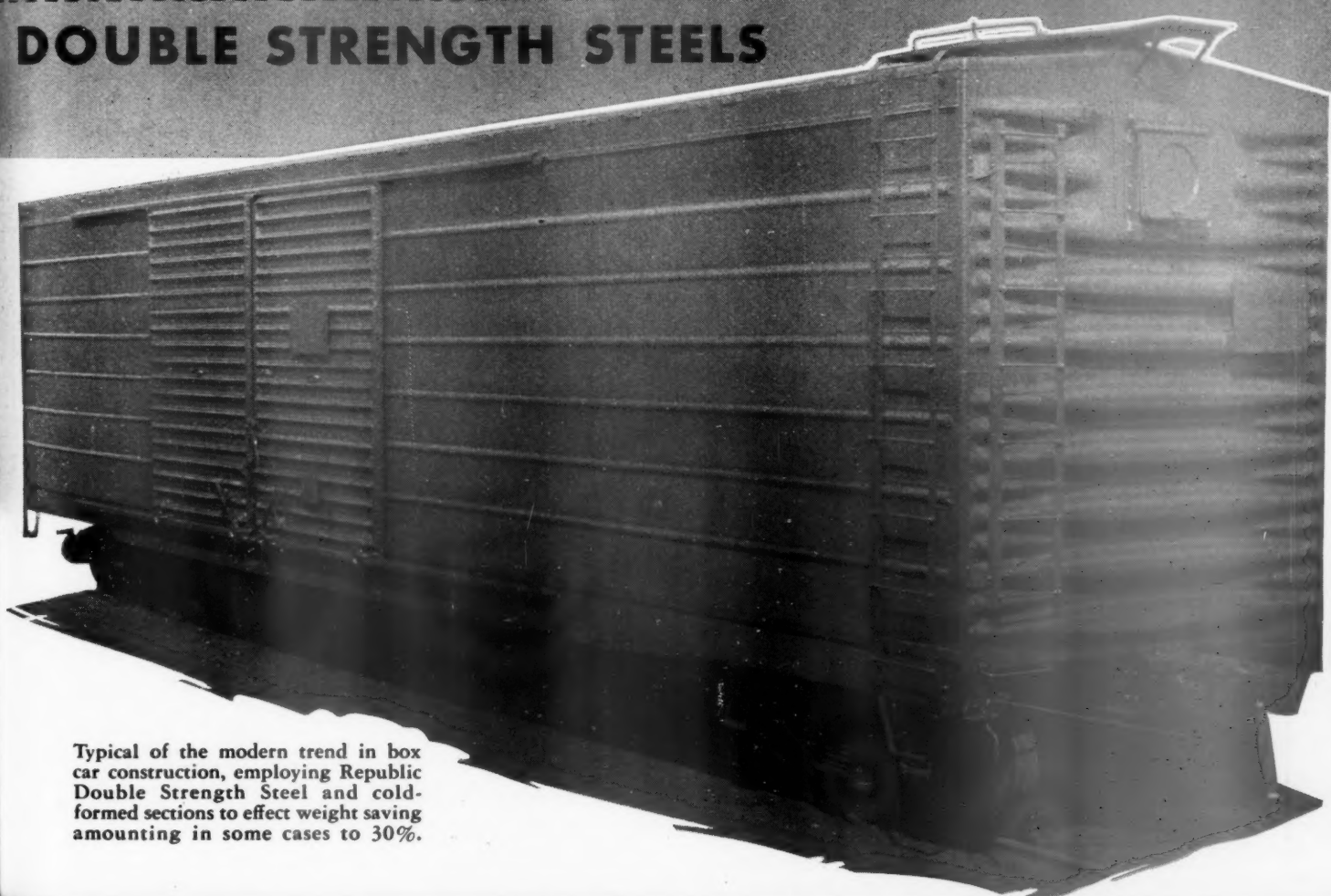
GENERAL OFFICES: CLEVELAND, OHIO • ALLOY STEEL DIVISION: MASSILLON, OHIO
BERGER MANUFACTURING DIVISION • NILES STEEL PRODUCTS DIVISION
UNION DRAWN STEEL DIVISION • STEEL AND TUBES, INC.
TRUSCON STEEL COMPANY

With the new construction methods made possible by the new high-tensile corrosion-resisting steels, you can reduce deadweight, thereby increase payload, add years to the life of equipment and cut maintenance costs.

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REPUBLIC

DOUBLE STRENGTH STEELS



Typical of the modern trend in box car construction, employing Republic Double Strength Steel and cold-formed sections to effect weight saving amounting in some cases to 30%.

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CARBON STEELS • SHEETS • STRIP • PLATES • PIPE • TUBING • BOILER TUBES
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WIRE • WIRE FENCING • FENCE POSTS • TIE PLATES • SPIKES • MANEY GUARD
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2. Engine is started easily from the operator's seat.
3. Six forward and two reverse speeds.
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5. Easiest steering crawler tractor built. Power-actuated steering clutches.
6. Steering levers and pedals adjustable to suit operator.
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8. Track shoes keyed to track links to prevent loosening of shoes.
9. Triple-gear oil pump. Full-pressure engine lubrication at all working angles.
10. Positive track roller lubrication at all speeds. Quintuple-sealed track rollers have patented gravity lubrication at low speeds and pressure lubrication at high speeds. Oil and dirt seals on both sides of sprockets. Self-cleaning idler wheel.
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12. Unit construction. Each steering brake, steering clutch, track frame assembly, and other units, adjusted or replaced without disturbing adjacent parts.
13. Famous TracTracTor accessibility. More productive hours, low maintenance cost.
14. Allied equipment engineered for the TD-18 by well-known manufacturers.

HERE is real news that operators of heavy-duty mobile power have long been looking for: International presents a new 70 h.p. (*drawbar*) Diesel TracTracTor, extending the benefits of International design and performance to a much broader field.

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Equipment especially designed for use with the TD-18 includes **SCRAPERS, BULLDOZERS, BULLGRADERS, ROAD GRADERS, WAGONS, SNOW PLOWS, WINCHES, LOGGING ARCHES.** Company-owned branches and International industrial power dealers will tell you all about the features of the International TD-18 TracTracTor.

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(INCORPORATED)
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MODERN LOCOMOTIVE SERVICE

Today's longer, faster runs, higher pressures and severer firing demand a superior grade of firebox steel with exceptional ductility, strength and dependability. Bethloc, Bethlehem's special low-carbon locomotive firebox steel, has these properties, has repeatedly demonstrated its superiority in widely representative service tests.

Bethloc superiority begins in the way it is

made. The steel in Bethloc locomotive plates is manufactured under strictest metallurgical supervision. The ingots are cast in sink-head molds, converted into slabs and then into plates. Bethloc has a low carbon content and high ductility with a fine, dense and uniform-grain structure. Bethloc is strong and tough. We shall be glad to supply you with detailed information on Bethloc.

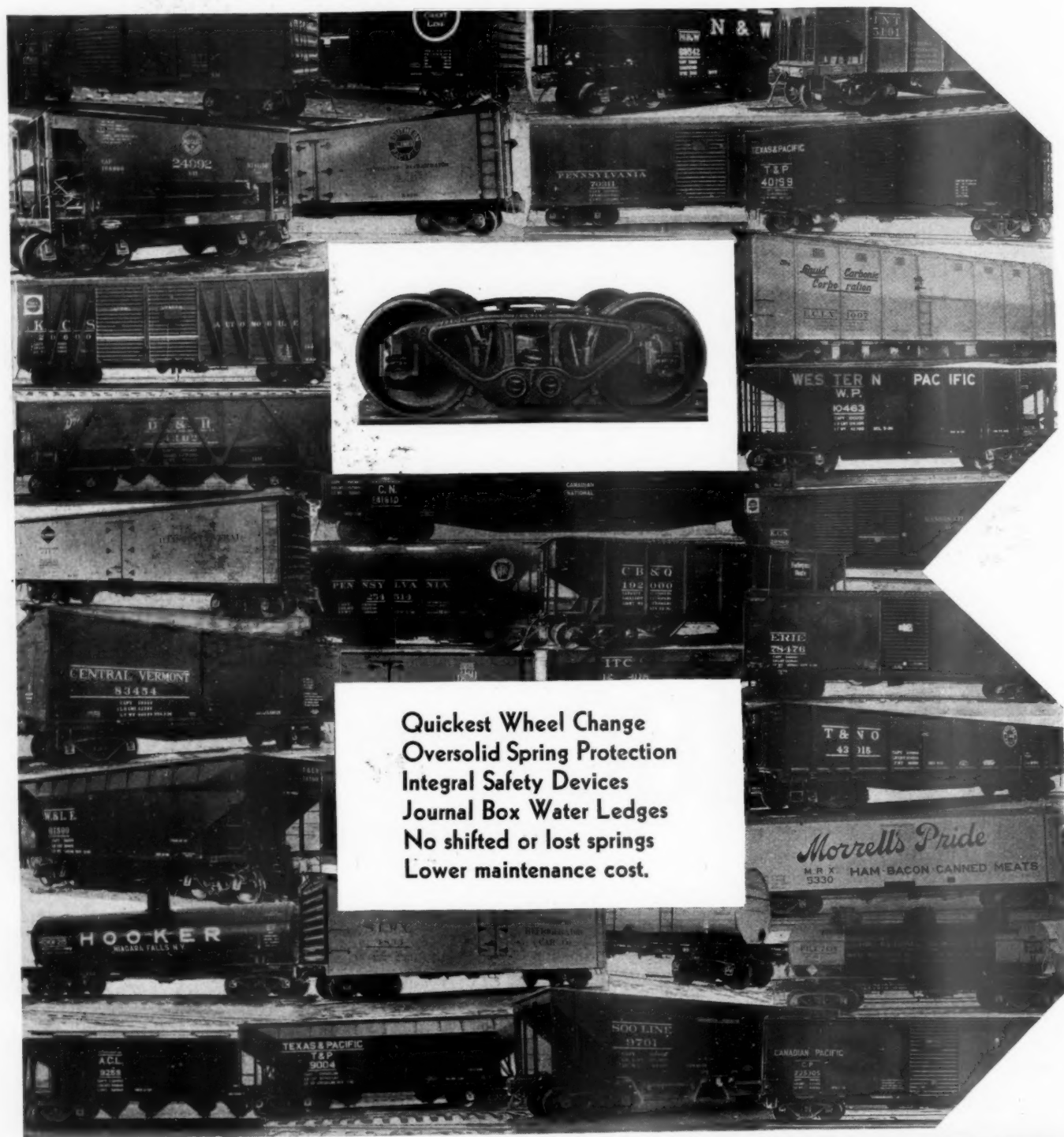
BETHLEHEM STEEL COMPANY



NATIONAL TYPE B

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 Journal Box Water Ledges
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All our cars equipped

WITH
VITALIZED AIR CONDITIONING

WITH ULTRA-VIOLET RAYS

YOU'LL ENJOY

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- *Washed by sparkling water-sprays!
- *Sterilized for your protection!



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THE TRAVELING PUBLIC doesn't get excited any more over ordinary railway air conditioning. They take it for granted.



Showing location of the Ultra-Violet Sterilizer directly behind the recirculated air intake grille in a car of the Canadian National Railways.



Coach of the Canadian National Railways equipped with Sturtevant Vitalized Air Conditioning with Ultra-Violet Rays.

But here's air conditioning that they won't take as a matter of course. It's the last word in railway air conditioning — Sturtevant "Vitalized" Air Conditioning with Ultra-Violet Rays!

You really have to travel in a car equipped with "Vitalized" Air Conditioning to appreciate how different it is. Passengers report that the air circulated by this system has an entirely different "feel". It's delightfully "mellow-cool" — has greater freedom from odors — is safer for health because sterilized.

With Sturtevant Vitalized Air Conditioning the air is washed in sparkling, highly-atomized water sprays. They impart to the air a certain *vital* quality that is difficult to describe but readily perceived... cleanse the air of dust and bacteria, as nature does during a rainstorm. In the winter, when the sprays are

shut down, ultra-violet rays sterilize the air.

Keep this in mind, too: when you equip your cars with Vitalized Air Conditioning, you not only make an important improvement in traveling comfort and safety—you also gain a potent traffic-building advantage. You have a feature which you can publicize—that people will talk about!

Investigate Sturtevant Vitalized Air Conditioning and its proved possibilities.

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Sturtevant "Railvane" Units or Systems are used by 37 railroads. "Railvane" Air Conditioning is protected by 40 issued patents and other patents pending.



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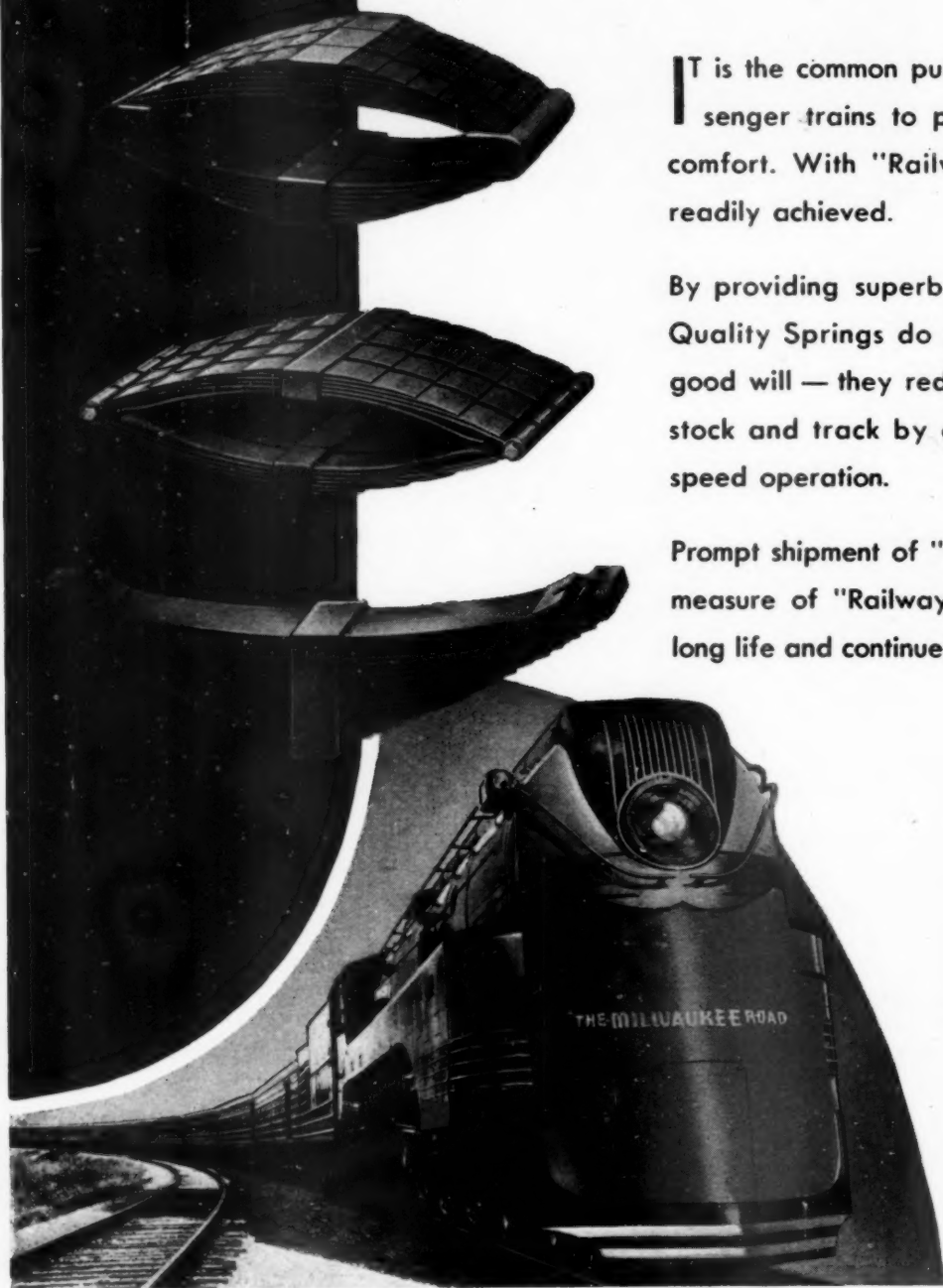
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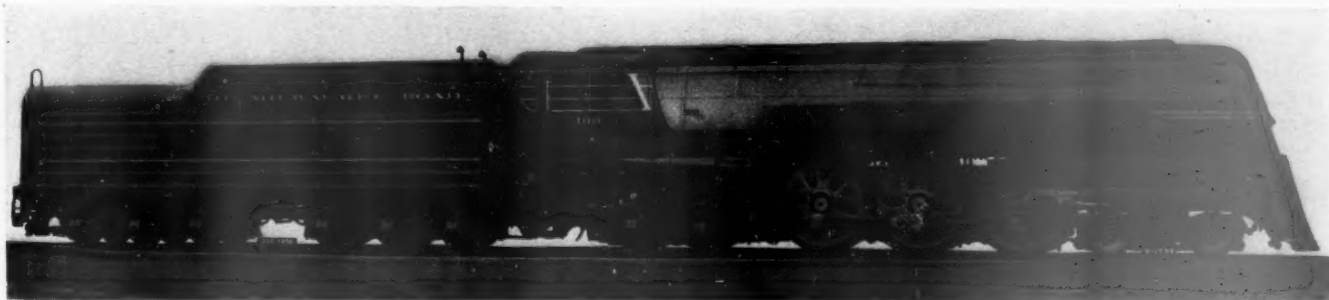
Among the factors seriously influencing railroad operating income is the element of high shopping and running repair costs of motive power.

For many years our Engineers have been developing and improving Commonwealth one-piece cast steel railroad devices. Their application materially reduces shopping and repair costs which are inherently high in fabricated construction.

At this time, perhaps as never before, conditions make it necessary for the railroads to adopt all possible methods and devices that will improve ratios between expenditure and income.

New or rebuilt power constructed with Commonwealth products will help meet the situation by insuring utmost maintenance economies and increased serviceability.

GENERAL STEEL CASTINGS
EDDYSTONE, PA. GRANITE CITY, ILL.

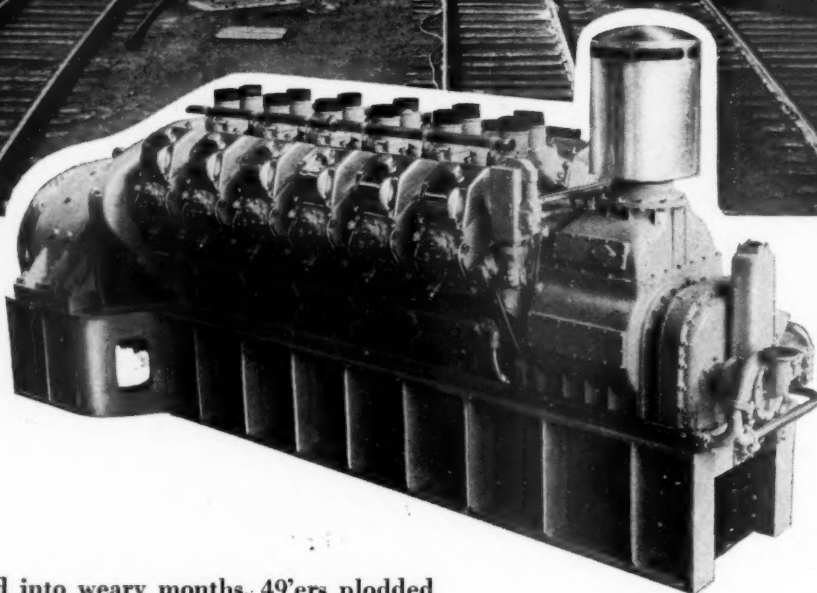


Locomotive Built By American Locomotive Co.

NEW THE OLD SANTA FE TRAIL



Four of the 12 new Diesel-powered streamliners now in Santa Fe service! In the center is a new streamlined steam locomotive.



General Motors 12-cyl. V-type Diesel as used by Santa Fe. This 2-cycle unit develops 900 h.p. at 750 r.p.m.

WHILE miles dragged into weary months, 49'ers plodded Westward over the rutted Santa Fe trail. In swift minutes, 39'ers glide smoothly over those same miles aboard twelve new Santa Fe streamliners.

These new trains are powered with General Motors two-cycle uniflow Diesels. With improved alloys and advanced engineering lowering weight per H.P. economical Diesel units are being applied to new uses.

Nickel-chromium iron castings for new G. M. Diesels were produced by the Allyne-Ryan Foundry Co., Cleveland. This intricate core work, with sections ranging from $\frac{1}{4}$ " to 2" in thickness, calls for the increased fluidity and uniform casting quality of irons strengthened and toughened with Nickel.

The homogeneous micro-structure of Nickel alloyed irons maintains pressure tightness, minimizes oxidation and corrosion and halts growth despite elevated temperatures. When you think of Diesels, think of Nickel.



Typical sections of G. M. Diesels cast by Allyne-Ryan Foundry Co., Cleveland, in Nickel-chromium iron. Uniform density and easy machinability are characteristics of this "Ryanite" material.

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STRONG

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EASILY MACHINED

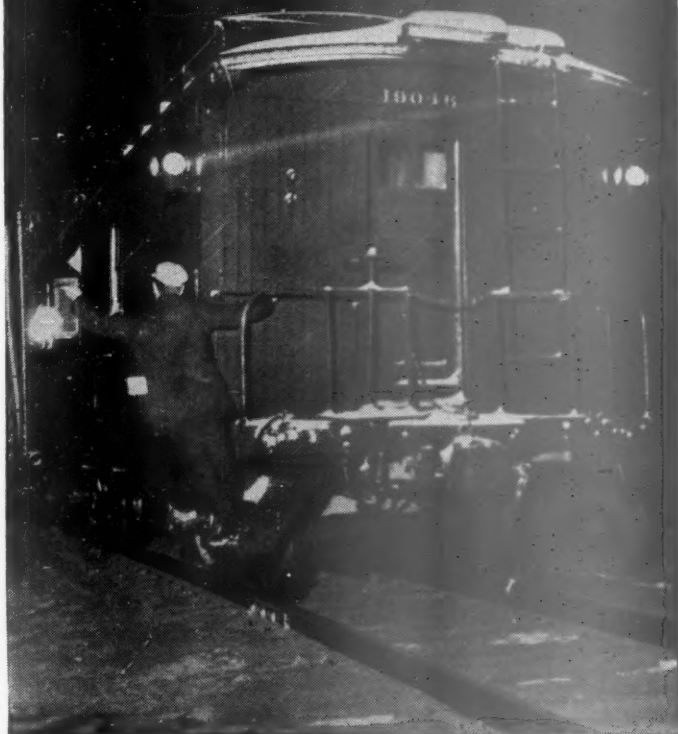
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Pittsburgh, Pa.
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Clearing, Illinois

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2

What makes a railroad GO?



It takes more than tracks and locomotives and cars to make a railroad function smoothly. Electrical equipment — signaling, repair, office and line equipment — is mighty important too.

Graybar serves the railroads as a supplier of *all* this equipment. Thanks to its long and specialized experience, Graybar is thoroughly familiar with railroad needs. And through its nationwide system of 83 warehouses, Graybar meets these requirements quickly . . . conveniently . . . completely.



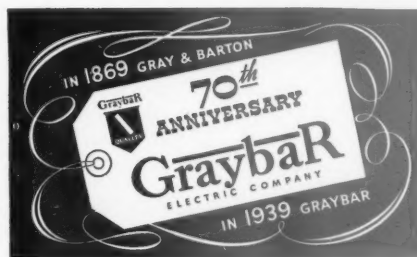
LAMPS



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Trona Railway Company
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plete experience. Address Box 503,
RAILWAY AGE, 30 Church Street,
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PROPOSALS

Sealed proposals will be received
at the office of the General Pur-
chasing Agent, Union Pacific Rail-
road Company, Omaha, Nebraska,
until 12:00 Noon, Central Standard
Time, April 6, 1939, and to be
publicly opened on that date, for
furnishing the necessary materials
for thirteen or more Railroad
Grade Crossing Protective Devices
to be installed under the Federal
Grade Crossing Program in the
State of Utah. Further informa-
tion may be obtained from Mr.
E. L. Fries, General Purchasing
Agent, Union Pacific Railroad
Company, Omaha, Nebraska.

PROPOSALS

Sealed proposals will be received
at the Office of the Superintendent
Telegraph and Signals of the C.
St. P. M. & O. Ry., Room 507,
275 East Fourth St., St. Paul,
Minn., until 10:00 A. M. Central
Standard Time, on the 11th of
April, 1939, for furnishing of sig-
nals and accessory materials to be
used in connection with Highway
Grade Crossing Protection at
three (3) Crossings in the State
of Wisconsin. Proposals, Specifi-
cations and Plans will be furnished
by the Superintendent Telegraph
and Signals at above address, on
request.

PROPOSALS

Sealed proposals for the installa-
tion of four flashing light signals
on the Norfolk Southern Railroad
will be received by the North Caro-
lina State Highway and Public
Works Commission in the office of
William L. Craven, Bridge Engi-
neer, in Raleigh, until 10 A. M.
April 11, 1939, at which time they
will be publicly opened and read.
Further information may be ob-
tained from the office of the Bridge
Engineer and plans and specifica-
tions may be obtained upon pay-
ment of five (5) dollars for each
set desired.

PROPOSALS

Sealed proposals will be received
by Mobile and Ohio Railroad, W.
J. Diehl, Purchasing Agent, Ful-
lerton Building, St. Louis, Mis-
souri, until 3:00 P. M. April 10,
1939 for furnishing certain mate-
rials under Group No. 3 "Relays
except flasher and time relays and
switch circuit controllers" for sig-
nal installation, Project WPGS-
429-C- (1), State Highway, No. 22,
south of corporate limits of Union
City, Tennessee, under federal
grade crossing program.

Railway Age Book Guide



Here is a handy reference
booklet on railroad books that
are of interest to readers of
"Railway Age." In it are de-
scribed practically all of the
books published during the past
decade that are in print. They
are classified under subject head-
ings and arranged in chronolog-
ical order. A title index in the
back facilitates quick reference.

SUBJECT INDEX

Accounting — Administration — Consolida-
tion — Co-ordination — Economics — Finance
— General — History — Law — Officers — Per-
sonnel — Rates — Regulation — Statistics —
Traffic Management — Valuation.

1936, 28 pages, 6 x 9 inches, paper cover.

1938. 12 page Supplement.

Free on Request

Simmons-Boardman Publishing Corporation
30 Church Street, New York, N. Y.

For Index to Advertisers

Appearing in

This Issue

See Last White Page

EDGEWATER STEEL COMPANY PITTSBURGH, PA.

Details of our products appeared in the following issues of *Railway Age* during 1936, 1937, 1938, 1939:

1936—July 4, 18—Sept. 5—Oct. 3—Nov. 7—Dec. 5.
1937—Jan. 2—Feb. 6—March 6—April 3—May 1—June 5, 16, 17, 18, 21, 22, 23—July 3—Aug. 7—Sept. 4, 18—Nov. 6—Dec. 4.
1938—Jan. 1—Feb. 5, 26—March 5—May 7—July 9, 23—Sept. 24—November 5—December 3.
1939—Jan. 7—February 4—March 4.

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3723 Grand Central Terminal

Chicago
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For results

use space

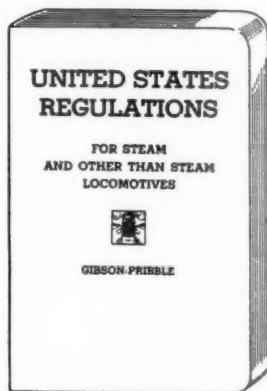
in the

Get Together Department

United States Regulations

FOR

LOCOMOTIVES



IN One Volume is included all current Rulings, Interpretations, Tables and Forms of the Bureau of Locomotive Inspection, together with Safety Appliance Standards for Locomotives, as prescribed by the Bureau of Safety.

In this new pocket-sized book is combined the material of four government booklets on the laws and regulations covering railway motive

power. Superfluous citations and obsolete material is left out so that it boils down to 219 pages, including a complete cross-index and 23 line drawings.

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219 pages, 23 illustrations, 4 1/8 x 6 3/8, flexible cover, \$1.25. Special prices on quantities.

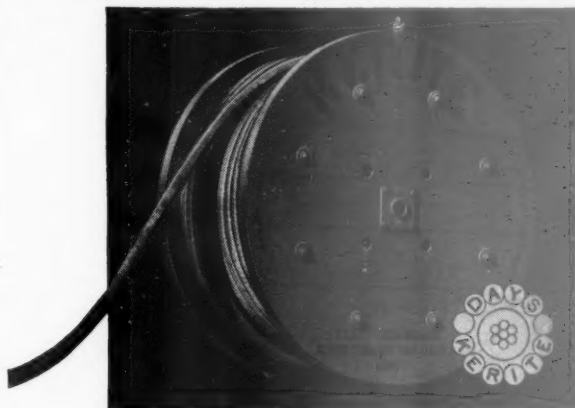
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Name

Old Address

New Address

Position Company

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Railway Age

*Twice Around
the World*
DAILY



EVERY 24 hours EMC Diesels pile up better than 50,000 miles in road and switching service,—equivalent to more than twice around the world. And... this has been accomplished in a little over four years.

ELECTRO-MOTIVE CORPORATION
SUBSIDIARY OF GENERAL MOTORS LA GRANGE, ILLINOIS, U. S. A.



Chilled Car Wheels have always possessed characteristics not found in wheels made from other materials. Today these wheels are better, stronger, and more uniform than ever before. This is owing in part to important metallurgical and design improvements, in part to a Centralized Inspection Service, and in important part to modernized facilities which produce under more accurately controlled conditions.

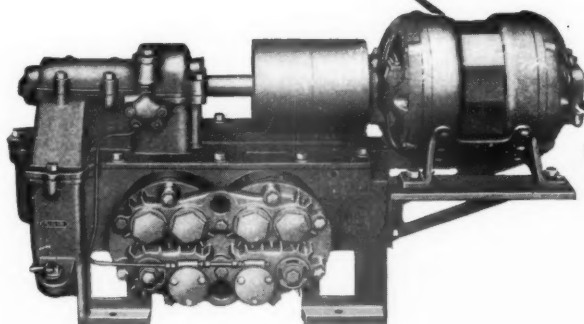
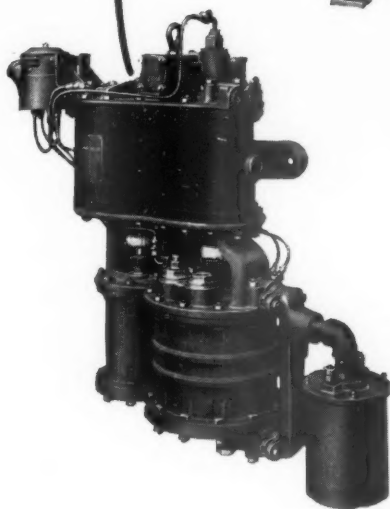
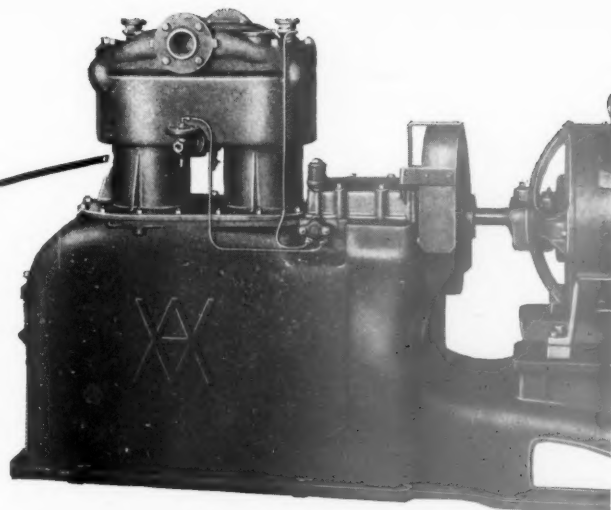
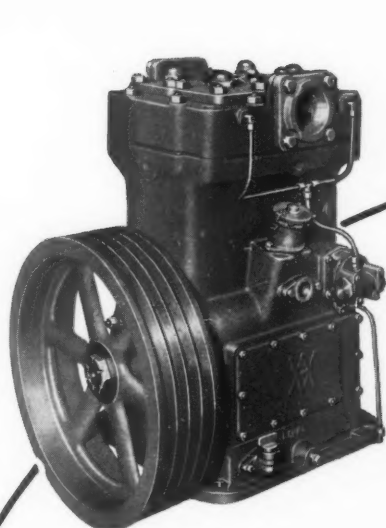
ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE,
NEW YORK, N. Y.

445 N. SACRAMENTO BLVD.,
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Uniform Product



Westinghouse AIR COMPRESSORS *for every purpose*

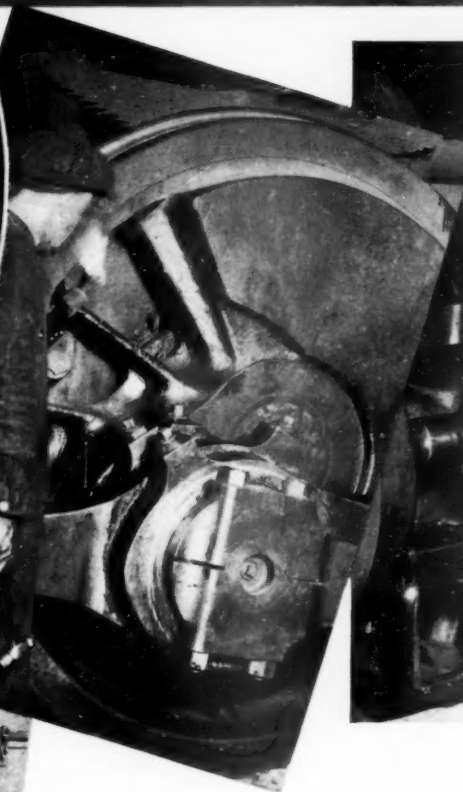
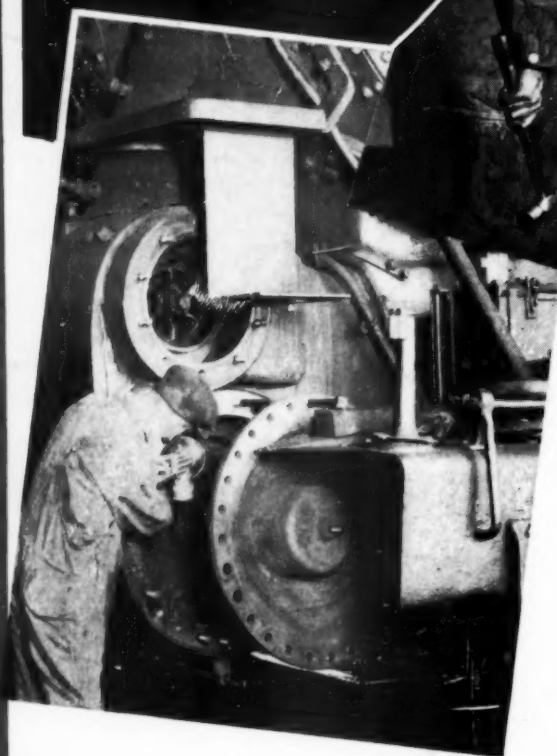
For every pneumatic requirement of railroads—signal operation—shop tools—garage work—yard charging plants—our line of compressors is applicable. The same high character that is so well recognized in compressors for air brake operation prevails throughout this varied line. Sizes range from 4 to 200 cu. ft. displacement, steam-, belt-, or motor-driven.

WESTINGHOUSE AIR BRAKE CO.

General Office and Works:
WILMERDING, PA.

HSGI

Economies



MAINTENANCE costs between classified repairs are considerably lower on locomotives equipped with wear-resisting parts made from HUNT-SPILLER Air Furnace GUN IRON.

No better proof is needed than a comparison of the inspectors' work reports—there are fewer items on the slips covering HSGI equipped locomotives.

Performance of this nature, of course, means higher availability—maximum monthly mileage and therefore, greater earnings from every locomotive as well as economical maintenance.

HSGI

Reg. U.S. Trade Mark

Cylinder Bushings
Cylinder Packing Rings
Cylinder or Piston Bull Rings
Pistons or Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

Finished Parts

Dunbar Sectional Type Packing
Duplex Sectional Type Packing
for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Cylinder Rings All Shapes
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

HUNT-SPILLER MFG. CORPORATION

V.W. Ellet Pres. & Gen. Mgr.

E. J. Fuller Vice-President

Office & Works

383 Dorchester Ave.

South Boston, Mass.

Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote St. Paul Rd., Montreal, P. Q.

Export Agent for Latin America:

International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER

GUN IRON

Air Furnace

